

UNITED STATES DISTRICT COURT  
WESTERN DISTRICT OF TEXAS  
AUSTIN DIVISION

UMG RECORDINGS, INC., ET AL, :  
Plaintiffs, :  
 : Case Number:  
vs. : 1:17-CV-00365-DAE  
 :  
GRANDE COMMUNICATIONS : Austin, Texas  
NETWORKS, LLC, ET AL, : October 18, 2022  
Defendants. :  
\*\*\*\*\*

TRANSCRIPT OF JURY TRIAL PROCEEDINGS  
BEFORE THE HONORABLE DAVID A. EZRA  
SENIOR UNITED STATES DISTRICT JUDGE

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1 (October 18, 2022, 9:00 a.m.)

2 \* \* \*

3 COURT SECURITY OFFICER: All rise.

4 THE COURT: Please be seated.

5 COURTROOM DEPUTY CLERK: Austin, 17-CV-365, UMG  
6 Recordings, et al vs. Grande Communications.

7 THE COURT: All right. Good morning. I hope you had  
8 a nice weekend. I guess late yesterday there were a couple of  
9 additional motions in limine filed. One of them is basically  
10 just a rehash of prior argument that had been made with respect  
11 to the Cox trial. I've reviewed it, and I am not changing my  
12 mind. I have given the plaintiffs leeway and the right to  
13 address to a witness, and argue, that there was another  
14 litigation, the Cox litigation, that the defendants were aware  
15 of it and, because they were aware of it, that in your view,  
16 the plaintiff's view, creates a -- at least an opportunity to  
17 investigate and possibly a red flag that maybe they might need  
18 to look at.

19 It's no different than a car manufacturer that has a  
20 certain brand of air bag in their car, in all their cars they  
21 built in a certain year, or multiple years, and they become  
22 aware of a different car manufacturer being sued over those  
23 same brand of air bags. That might be a red flag or a reason  
24 for them to investigate. And if they choose not to investigate  
25 or take appropriate steps, then, certainly, you can argue

1 willful blindness.

2           Now, if they investigated and they came to a different  
3 conclusion, that would be a matter for the jury. What we will  
4 not do -- and I've said this repeatedly, and I won't address it  
5 again in this litigation. I don't want to get another motion  
6 in limine on this. I will not allow the verdict to come in for  
7 multiple reasons. Under 403, it's far more prejudicial than it  
8 is probative. First of all, that's a different trial, some of  
9 the same witnesses, many different, I am quite sure.

10           Secondly, that case is not this case. We even had  
11 different lawyers, I believe. Thirdly, it's been reversed.  
12 There's a dispute as to whether it was reversed for reasons  
13 that are relevant here, but we don't need to get into that. I  
14 assume -- unless they've settled the case. Have they settled  
15 it? They did settle it. So there won't be a retrial.

16           So we don't know what would have happened in a  
17 retrial. Maybe it would have gone the other way, who knows.  
18 It just is not appropriate to lay in front of a jury the  
19 verdict in a different case, with different parties, with  
20 different lawyers, at a different time. A lot of witnesses may  
21 be similar, but others are different. Circumstances are going  
22 to be, at least to some degree, different, and then say to  
23 them, you see, this file-sharing software was in this case and  
24 they got a giant verdict, and -- ostensibly, for purposes of  
25 willful blindness, but in reality, sitting -- you know,

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1 providing the jury with an easy way out when they deliberate.

2 You know, another jury found the Internet provider  
3 responsible and awarded, you know, these huge damages. Eh, you  
4 know, kind of the same case, easy enough for us to do it.

5 Now, would I like that if I was the plaintiff? Of  
6 course. Is it appropriate and fair? No. For the reasons I  
7 have stated before and I restate now.

8 MR. BART: Your Honor, may I briefly address that?

9 THE COURT: Yeah. You're not going to change my mind.

10 MR. BART: I'm not -- I just want to make the record,  
11 frankly. The issue is not so much your ruling, because Your  
12 Honor has been consistent all throughout. You ruled on our  
13 motion in limine on this very subject and held that we were  
14 entitled to present the jury with the fact that Rightscorp sent  
15 notices to Cox, and that Cox was ultimately found liable for  
16 copyright infringement based on those notices. That is your  
17 ruling.

18 On Friday, you also said, *"You can put in who won just*  
19 *not the verdict."* And so what I really want is clarification.  
20 And the reason that this is coming up repeatedly is because  
21 there's some ambiguity about the application of your principles  
22 to the specific evidence in this case.

23 THE COURT: Well, I am consistent. I said -- you  
24 know, the result that there was a verdict in the case.

25 MR. BART: Right.

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1 THE COURT: And that they were aware of the verdict  
2 for purposes of willful blindness.

3 MR. BART: Exactly.

4 THE COURT: But I don't want to hear -- I don't know,  
5 how many hundreds of millions of dollars was it?

6 MR. BART: It was 25 million.

7 THE COURT: That was all?

8 MR. BART: Yes.

9 THE COURT: Oh, minuscule.

10 MR. BART: So the point really is --

11 THE COURT: By today's standards.

12 MR. BART: Yes.

13 THE COURT: No wonder they settled. Probably  
14 25 million in attorneys' fees. Go ahead.

15 MR. BART: Could well have been. The purpose for  
16 today and the reason we filed a motion, just to go back and to  
17 put this in procedural context --

18 THE COURT: Okay.

19 MR. BART: -- the argument on Friday was about whether  
20 or not and to what degree the Cox trial decision could be used  
21 with Mr. Boswell. And at Mr. Brophy's request, the discussion  
22 was limited to that subject, and the transcript is very, very  
23 clear that that's all that was going to be done.

24 However, during the argument, Your Honor made the  
25 statements that you've repeated again this morning. So we

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1 wanted to get clarity that that meant that these particular  
2 documents, that were contemporaneous documents of Grande's and  
3 showed that they were following it and that they reacted to it,  
4 and therefore is consistent with Your Honor's ruling --

5 THE COURT: I've already said that the subject  
6 matter -- and I don't have those documents in front of me. I  
7 don't know what they say. If the documents mention the amount  
8 of the verdict, or whatever, that is not coming in.

9 MR. BART: Well, the problem, then, is we can redact  
10 out any reference to that --

11 THE COURT: Yeah.

12 MR. BART: But it's put --

13 THE COURT: Oh, my God. They got a \$25 million  
14 verdict.

15 MR. BART: But we're not interested, to be perfectly  
16 clear --

17 THE COURT: That's not coming in.

18 MR. BART: -- and we've never argued that point, but  
19 what we are arguing is that their contemporaneous behavior is  
20 material. And to take that out of the case is very  
21 prejudicial.

22 THE COURT: I also want to let you know that I have  
23 every intention -- and you might want to remind me of this --  
24 of giving a limiting instruction to the jury that the fact that  
25 there was a verdict in favor of the plaintiff in that case is



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1 of no purpose here at all. It is not an indication of the  
2 defendant's liability in this case. It's only being offered  
3 for purpose of the plaintiff's knowledge of that case, period.

4 MR. BART: Right. And the defendant's knowledge of  
5 that case.

6 THE COURT: That's what I meant.

7 MR. BART: Oh, okay. I'm sorry.

8 THE COURT: Did I say plaintiff?

9 MR. BART: I think so, yes.

10 THE COURT: Oh, well. See, you've already got me  
11 going. You've accomplished your task.

12 MR. BART: That was honestly not -- never my goal.

13 THE COURT: Whatever they're paying you, it's not  
14 enough.

15 MR. BART: You hear that?

16 So we will proceed to introduce that evidence. We  
17 will take out any reference in the doc -- I think there's only  
18 one document that mentions a dollar amount, and we will never  
19 argue to the jury anything about the result controlling because  
20 again, to make it very clear on the record, the only impact,  
21 the only relevance, from our perspective, is the  
22 contemporaneous impact of the case and the result on the  
23 conduct of the parties, plain and simple.

24 THE COURT: That's it. And as I said, I will be  
25 giving a limiting instruction at the time that that comes in,

1 and we'll see about -- you know, I already have a general  
2 instruction, which I'm sure I will give.

3 MR. BART: I have other comments to other parts of it,  
4 but I'm really only concerned about our ability to move forward  
5 on that evidence, and we will do so.

6 THE COURT: I think I've clarified it.

7 MR. BART: You have. Thank you.

8 THE COURT: Yes.

9 MR. HOWENSTINE: Your Honor, if I could address that  
10 briefly. Zach Howenstine for the defendant.

11 I think there's been a little bit of slippage in what  
12 Mr. Bart has been saying. Previously, when Your Honor  
13 addressed this issue, I think everyone had the same  
14 understanding, which was that the plaintiffs could introduce  
15 the fact of that other litigation and the fact that Grande was  
16 aware of that.

17 THE COURT: Well, I considered -- yeah, this may be,  
18 in part, my fault, right? You know, I like to think I don't  
19 make mistakes, but occasionally I do. And maybe I'm not as  
20 clear sometimes as I should be. I admit that.

21 The fact of the matter is that I always understood  
22 when I said the fact of the litigation, okay, the fact of that  
23 to include the fact that there was, indeed, a verdict for the  
24 plaintiff. Okay? That's what I was thinking. I don't think I  
25 was as clear as I should have been, so I can understand the

1 confusion.

2 MR. HOWENSTINE: And I just wanted to point out, Your  
3 Honor --

4 THE COURT: The point is that it only matters when we  
5 talk about whether your client had knowledge that this was --  
6 see, the fact that somebody has knowledge of something, which  
7 is remote or fanciful or has a high, high likelihood of being  
8 something that is unlikely to impact them is significantly  
9 different than their knowledge that it is substantive and it  
10 does, in fact, have the potential to impact them in a serious  
11 way; and therefore, it goes -- you know, this is one of those  
12 strange areas of civil law where a criminal concept, which is  
13 willful blindness, applies. And that's what makes it  
14 difficult.

15 If we didn't have the concept of willful blindness, if  
16 they had to prove actual knowledge beyond -- and willful  
17 blindness was not a potential, I would absolutely agree with  
18 you, and this would not be in the least bit probative. It  
19 would be much more under 403, much, much more prejudicial than  
20 probative. But because we have willful blindness, they are  
21 entitled, in my view, to show that there was a serious concern,  
22 not just a fanciful concern.

23 People sue people all the time for nothing. I mean,  
24 you know, you should see some of the cases -- well, you  
25 probably do see them. Well, you might not, because law firms

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1 at your level rarely get involved in these kinds of cases, but  
2 I'm going to tell you, I get companies sued for unbelievably  
3 ridiculous things.

4 MR. HOWENSTINE: Your Honor --

5 THE COURT: And I get them sued for serious things  
6 too.

7 MR. HOWENSTINE: -- I'd just like to make two points  
8 in response to that. Number one, if we are going to be talking  
9 about the fact of the verdict, that there was a verdict for the  
10 plaintiff, then that raises those same concerns about the  
11 reversal and the subsequent settlement, so --

12 THE COURT: Well, it doesn't in the sense that at that  
13 point in time, at that point in time, it was a red flag.

14 MR. HOWENSTINE: Right. But then we would need to  
15 show that subsequent events showed that if we acted, based on  
16 that, that we were mistaken to do that, because there was a  
17 subsequent reversal and then a settlement.

18 THE COURT: Well, I don't see --

19 MR. HOWENSTINE: So we would still have the  
20 trial-within-a-trial scenario. And these are the cases that we  
21 cited on pages two to three of our brief. You know, lots of  
22 different Court of Appeals cases finding that that's the real  
23 concern when you bring in this evidence about the result in  
24 another case, then you inevitably have that  
25 trial-within-a-trial. And that's why we have this principle --

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1 and this is from Wright & Miller and some other cases that we  
2 cited --

3 THE COURT: I haven't had a chance to read, you know,  
4 pull out those cases myself from this brief. You know, I just  
5 came in and was handed the papers --

6 MR. HOWENSTINE: Sure.

7 THE COURT: -- before I walked in. So I stepped back  
8 and quickly read. Are these the same cases you previously  
9 cited?

10 MR. HOWENSTINE: No.

11 THE COURT: Well, I haven't had a chance.

12 MR. HOWENSTINE: These are numerous -- numerous  
13 additional cases, Your Honor.

14 THE COURT: All right.

15 MR. HOWENSTINE: We have cases from --

16 THE COURT: But are these willful blindness cases?

17 MR. BART: No.

18 MR. HOWENSTINE: Well, these are cases about  
19 introducing evidence of prior verdict. And the principle, Your  
20 Honor is that --

21 THE COURT: Well, I understand that, but that's not  
22 what I just asked you. Are these willful blindness cases?

23 MR. HOWENSTINE: Those are not, but I'd like to  
24 separately address willful blindness. That's the separate  
25 point. The question about willful blindness is whether we

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1 could have learned -- whether we deliberately avoided learning  
2 about whether there was a --

3 THE COURT: The key, the key -- you're right. Okay?  
4 But the key here is the word "deliberate." Do you understand?  
5 "Deliberate" is the key word.

6 MR. HOWENSTINE: Right.

7 THE COURT: And that's why I said if something is  
8 fanciful, if it's just kind of out there in the ether, because  
9 people get sued for all kinds of stuff, and who knows what.  
10 And Internet service providers get sued all the time. I'm sure  
11 that record companies get sued all the time, you know? I mean,  
12 it happens.

13 MR. HOWENSTINE: Yes, Your Honor.

14 THE COURT: I know that Sony Corporation gets sued all  
15 the time.

16 MR. HOWENSTINE: But the question, then, is whether --

17 THE COURT: Doesn't mean they're wrong.

18 MR. HOWENSTINE: The question is whether we could have  
19 done something to unblind ourselves and determine whether  
20 infringement had occurred and we didn't do that. But this  
21 question about whether we knew about the Cox case doesn't  
22 involve any of those questions, because there's no dispute that  
23 we knew about the Cox case. So it's not a question of whether  
24 we were blind to anything. It's whether, according to the  
25 plaintiffs, the fact that we knew about the Cox case means that

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1 we knew about infringement. And that's not willful blindness  
2 at all, Your Honor. I think that's the point.

3 So we would ask that Your Honor take a look at our  
4 brief, and specifically take a look at the cases that we cited,  
5 because we think they're clear that the purpose of verdict in  
6 another case -- there are two possibilities. Number one,  
7 either the verdict is -- or the judgment is preclusive on some  
8 issue in the case, and then you bring it in, and you preclude a  
9 party from re-litigating that.

10 THE COURT: But you have to have the same -- yeah, the  
11 same parties, the same issues. You're talking about issue  
12 preclusion.

13 MR. HOWENSTINE: Right. And what the cases say, if  
14 the judgment is not preclusive, then it's irrelevant. And  
15 that's the situation we have here.

16 THE COURT: Yeah, but I will --

17 MR. BART: Your Honor, may I briefly respond? Are you  
18 finished?

19 THE COURT: Here we are. See, we're right back with  
20 our tennis ball game.

21 MR. BART: But the problem, Your Honor, is you asked  
22 the right question. None of those cases deal with willful  
23 blindness. They all deal with an attempt by a party to  
24 actually have the prior verdict have an impact on the jury.

25 There's one case that they cited there, one, that

1 dealt with providing the prior case as evidence of context of  
2 behavior, and in that case, the evidence was admitted. And  
3 that's one of their cases that they cited. This is all a red  
4 herring. There is not a single case that's on point with  
5 these, because in a willful blindness context, the fact that  
6 they were aware of the case and then had contemporaneous  
7 behavior, that's what we want to show.

8       They don't really care about re-litigating. That has  
9 nothing to do with it. The reason they jumped up is because  
10 what they really care about is excluding evidence that shows  
11 how they reacted to these verdicts, or to this result. They  
12 want to take that out of the case because it hurts them on  
13 willful blindness, and that's why this becomes such a big  
14 issue.

15       I think Your Honor has been clear all along that the  
16 impact of the case and its result on the contemporaneous  
17 conduct of the parties --

18       THE COURT: Well, obviously, I haven't been as clear  
19 as I need to be.

20       MR. BART: Well, but that's why we made the motion,  
21 Your Honor, and that's why it's good to have the argument. But  
22 I still don't think that there's any case that's ever been  
23 cited to you in which the contemporaneous conduct of a party in  
24 responding to a decision or a case has been excluded.

25       What it does is it takes material evidence out of the



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1 case. We're not looking to argue the merits of that case. It  
2 doesn't need to. And the whole thing about the appeal is  
3 completely misleading. The Fourth Circuit specifically said,  
4 *"At trial, BMG offered powerful evidence from which a*  
5 *reasonable jury could find that Cox willfully blinded itself to*  
6 *specific instances of infringement."*

7 That appeal dealt with a jury instruction and not at  
8 all with Rightscorp. Okay? It dealt with what the stand- --

9 THE COURT: Make sure we get that jury instruction  
10 right, okay?

11 MR. BART: Well, I'm sure we'll have discussions on  
12 those things as well, but I think --

13 THE COURT: We don't want to retry this case.

14 MR. BART: The point of --

15 THE COURT: Well, somebody might want to retry it.

16 MR. BART: Yeah. But I think if material evidence  
17 about how they reacted in realtime that affected behavior  
18 that's at issue in this case is excluded, then you have the  
19 greatest chance of retrial, any possibility.

20 THE COURT: Okay.

21 MR. HOWENSTINE: Your Honor, we would just ask --

22 THE COURT: I told you I will look at your cases. The  
23 problem that you have -- please, be seated, okay, so we don't  
24 just keep going on and on and on.

25 The problem we have is that, as I said before, this is

1 one of those strange areas of the law where the concept of  
2 willful blindness plays a role -- and there's some other areas  
3 where it does as well. This isn't the only one, but where  
4 willful blindness plays such an important role in the context  
5 of the case. And I think that was put in the law because it's  
6 so difficult to prove somebody actually knew, you know. I  
7 mean, Congress wanted to level the playing field, so to speak,  
8 for plaintiffs.

9 Now, I couldn't agree with you more. Any mention of  
10 the verdict is a mistrial here. If somebody pops up, some  
11 witness pops in front of the jury and says, \$25 million,  
12 there's no way they can unhear that. And I would, in all  
13 likelihood, declare a mistrial. So if you are wanting to avoid  
14 a mistrial, please be sure that you school your witnesses that  
15 they cannot say anything about the amount of the verdict.

16 I believe that with a strong limiting instruction to  
17 the jury about what this actually stands for in terms of  
18 evidence, that any potential prejudice to your client, above  
19 and beyond the fact that anytime evidence is introduced by one  
20 party against another, obviously, it isn't evidence that  
21 they're thrilled to see or hear. I mean, lawyers get up all  
22 the time in front of me and say -- and this is particularly  
23 true in criminal cases. I'll get, Well, Judge, you know, if  
24 you admit that eyewitness testimony, that's going to be highly  
25 prejudicial to my client.

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1 Well, I understand that, but he saw him rob the bank.  
2 He's going to testify. Obviously, it's going to be prejudicial  
3 to your client. And that's where we are.

4 Now, I will allow defense counsel and plaintiff's  
5 counsel, if you wish, to work on that limiting instruction.  
6 Okay? I don't normally do that. I'm perfectly capable of  
7 drafting up my own. I could give a limiting instruction right  
8 now to the jury, you know, after 36 years as -- 35 -- I don't  
9 know how many years. I quit counting. I can give a limiting  
10 instruction to the jury. Okay? But if you would like, I will  
11 make an exception here. I will be more than happy to allow you  
12 to assist me in coming up with an appropriately strong -- and I  
13 want a strong limiting instruction here. Okay? I'll let you  
14 do that.

15 I don't know that I've ever done that. I don't think  
16 I ever have, but I'll do it here. Because I do know the  
17 importance of it. I understand where you're coming from. I  
18 was a trial lawyer. I fully appreciate your concern about it  
19 and why you want to try to keep that out, but I also understand  
20 that it's critically important in a case like this where there  
21 has been a red flag -- and it doesn't really, you know, the  
22 amount of the verdict is absolutely anathema to a fair trial,  
23 because -- and that's what I was saying when I said -- what I  
24 meant when I said earlier this morning that you can't allow  
25 that kind of evidence before a jury, and I won't, now or ever.

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1 Well, I shouldn't say ever. Maybe there will be the unique  
2 case where it will be important, I don't know, but not in this  
3 kind of context.

4           So we'll go with that. And you know, sometimes I just  
5 have to make a call. The Appellate rules give me some latitude  
6 in attempting to control the admission of evidence and the way  
7 in which it is admitted. And, you know, a judge that won't  
8 make a ruling and just sits on it forever -- we had a judge one  
9 time in Hawaii that used to take a recess when lawyers would  
10 make an objection to a witness's testimony. You know,  
11 three-day trial would take three weeks. It's ridiculous, you  
12 know, get your law clerks to research it, every time somebody  
13 says, this is hearsay. You have to make a call or you don't  
14 get the trial done.

15           And the only reason I'm addressing this now again is  
16 because it was brought to my attention. I'm perfectly happy to  
17 sail on. I always intended to give a limiting instruction.  
18 That's not new. I don't know whether I mentioned it before,  
19 but it was -- to me, it should have been apparent that if  
20 you're going to let this kind of testimony in, you have to give  
21 a limiting instruction.

22           Now, there's no question that they have the right, in  
23 my view, absolutely no question at all, to get in before the  
24 jury the fact of the Cox litigation, because it does go,  
25 absolutely directly -- like many other things. It would be no

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1 different than some business person coming in to them at some  
2 point and saying to them, Hey, you know, you guys have a big  
3 problem here. People are -- and we've got that testimony, too,  
4 here, I think, to a degree -- people are using the service, you  
5 know, via BitTorrent to infringe copyrights left and right, and  
6 you really need to do something about it.

7           Would that come in? Yes. Because it would go to  
8 willful blindness. Now, there are many defenses. Hey, we  
9 looked at it, we did not think we had a responsibility because  
10 we felt we were doing everything we could do. But that's why  
11 we have a jury trial.

12           So if you don't want to work on a limiting  
13 instruction, I'm perfectly happy to do it myself, okay? But if  
14 you want a limiting instruction, get one to me. All right?  
15 And if you can't agree on one, get me various versions. I will  
16 look at it and I will decide for myself what I'm going to give.  
17 All right? End of story.

18           Can we not address this again? There comes a point  
19 where, as I said, I have to make a ruling, and it is then for  
20 the jury to decide what to do, and then we have a process  
21 called the Court of Appeals. And if I have made a mistake that  
22 affects the fairness and integrity of the proceedings -- and  
23 "integrity," we don't mean integrity of somebody else. We're  
24 talking about the fairness of the proceedings -- by admitting  
25 evidence that was so taintive that the jury couldn't possibly

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1 listen to my limiting instruction and disregard it, and they  
2 reverse whatever the verdict might be, I will understand. I  
3 mean, that's the name of the game.

4 As I told you, I sit all the time as an Appellate  
5 judge by designation on the Ninth Circuit. All the time.  
6 Three times a year, sometimes four, for two or three days of  
7 sitting. And I've done it for 30 years. I appreciate that  
8 process and I appreciate the Fifth Circuit. They will look at  
9 it. But at some point you got to take it out of your hands and  
10 my hands and give it to them. That's the name of the game.

11 All right. Now, as to this other one, I haven't even  
12 had a chance to look at that one. I don't know, this is some  
13 person? I will look at that.

14 MR. HOWENSTINE: If I might respond to that briefly,  
15 Your Honor. That's not going to affect anything going on  
16 today. We intend to file a response later, but that's probably  
17 not going to come up until next week.

18 THE COURT: Okay.

19 MR. BART: We have no problem --

20 THE COURT: Well, I understood that this issue, that  
21 Cox was going to come up either today or tomorrow, so I needed  
22 to address it this morning. I was trying to -- if I was going  
23 to rush to read this. And as I told you, I haven't had the  
24 chance to look at all the cases. I will go back and look at  
25 the cases.

## JURY TRIAL PROCEEDINGS

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1           Look, I told you before, in Hawaiian parlance, I am no  
2   Opihi. If I look at the cases and I read them and I agree with  
3   the defense that it shouldn't come in at all based on those  
4   cases -- I doubt it seriously, but if that were to happen, I  
5   will come out and say, you know, I made a mistake, and it  
6   shouldn't come in. But I can't see it, because these cases are  
7   not willful blindness cases and that's the killer here. That's  
8   the crux of it. That's the whole issue here that means  
9   anything.

10           Now, I've burned my voice out for the week already.  
11   What am I going to do?

12           *(Discussion off the record.)*

13                   \*   \*   \*

14           THE COURT: Go ahead and bring in the jury.

15           COURT SECURITY OFFICER: All rise for the jury.

16           *(9:31 a.m., the jury enters the courtroom.)*

17                   \*   \*   \*

18           THE COURT: Please be seated. Good morning, ladies  
19   and gentlemen. I hope you had a good weekend and Monday.  
20   Sorry we started late, but as is almost always the case where  
21   you have a litigation that involves a lot of documents, a lot  
22   of witnesses, a lot of issues, I need to address those to the  
23   lawyers, so they know how to proceed, so they know how to move  
24   forward. Otherwise, we get a big problem. We start getting  
25   all kinds of sidebars and other issues and arguments. Better

1 to do it before we start, but that doesn't mean we aren't going  
2 to have some issues, but at least we got rid of those.

3 Okay. Counsel.

4 MR. O'BEIRNE: Good morning, Your Honor.

5 THE COURT: Good morning.

6 MR. O'BEIRNE: Plaintiffs are prepared to proceed with  
7 Ms. Frederiksen-Cross.

8 THE COURT: Yes, please step forward. Please be  
9 seated, and I just want to remind you that you remain under  
10 oath.

11 THE WITNESS: Yes, sir.

12 THE COURT: You may proceed, counsel.

13 DIRECT EXAMINATION CONTINUED

14 BY MR. O'BEIRNE:

15 Q. Good morning, Ms. Frederiksen-Cross.

16 A. Good morning.

17 Q. How are you?

18 A. Good.

19 Q. On Friday, when we broke from court, we had just finished  
20 discussing how the BitTorrent system works. Do you recall  
21 that?

22 A. Yes.

23 Q. I'd like to turn your attention now to the Rightscorp  
24 system for detecting infringement over BitTorrent. Do you  
25 understand the Rightscorp system?



1 A. Yes, I do.

2 Q. How did you come to that understanding?

3 A. Principally through studying the code, the source code of  
4 the Rightscorp system.

5 Q. Did you review any other relevant evidence about how the  
6 Rightscorp system functions?

7 A. Certainly. I have seen Mr. Boswell's sworn testimony in  
8 this matter and also was present in court when he testified.

9 Q. Can you please provide the jury with an overview of how the  
10 Rightscorp system works at each stage?

11 A. Sure. Just kind of walking through a couple of phases  
12 here. The beginning of this system is when Rightscorp is hired  
13 by a client to monitor their protected works. And so what they  
14 receive is information about the works that they are to  
15 protect, and they put that in a database.

16 Then the next step is that they search for torrents whose  
17 names indicate that they might contain a protected work, so it  
18 might be the name of an album or the name of an artist or the  
19 name of a particular song. They then go out to using just a  
20 normal BitTorrent process to download that payload from the  
21 BitTorrent network. And so in the process of that, they go  
22 through all the normal steps to get a list of peers and to  
23 download the payload of the particular suspect work. I'm going  
24 to call it a suspect work, because it hasn't been verified yet.

25 The next step, then, once they have those files on their

1 system, is to submit -- or to verify and identify that the  
2 suspect work actually contains, you know, the particular song,  
3 the name of the work suggested it has. So that process  
4 involves verifying the music. In most cases, that's done using  
5 a third-party audio identification service. Early on in the  
6 game they used a service called Audible Magic. Later they used  
7 a service called AcoustID.

8 In both cases, those are services that rely on the creation  
9 of a digital fingerprint that's based on the characteristics of  
10 the music, so this is different than a hash. It's actually  
11 based on the acoustic characteristics of the music. And that  
12 fingerprint is then matched by that service against a database  
13 that has reference works. So that the service has already  
14 identified the music. And they then pass back a response to  
15 Rightscorp indicating the identity -- well, whether they were  
16 able to match the work and, if so, what it matched to, what the  
17 song was.

18 In some cases, they also use a manual verification --

19 MR. BROPHY: Your Honor, I'm sorry, but this is a  
20 monologue, not a direct examination.

21 THE COURT: Yes, sustained. You need to ask her  
22 questions and kind of keep with that format, if you will.

23 MR. O'BEIRNE: Understood, Judge. We're just looking  
24 for an overall summary of each step, but we'll take them one  
25 step at a time.

1 THE COURT: Yes, I think that's a good idea.

2 MR. O'BEIRNE: Next slide, please.

3 BY MR. O'BEIRNE:

4 Q. You were just discussing, Ms. Frederiksen, the -- obtaining  
5 works from the clients, and then the verification process. So  
6 using this demonstrative, could you orient the jury to that  
7 process, as you were just describing it, and finish your  
8 description of how that works?

9 A. Sure. On the leftmost side here we have, you know, the  
10 clients of Rightscorp providing a list of the works they want  
11 protected. And then Rightscorp searching for the potentially  
12 infringing files, downloading those files, as I described. So  
13 they just download them from the swarm, so they're downloading  
14 the actual torrent payload, as represented by the torrent. And  
15 then submitting the song or songs that they downloaded from  
16 that payload for identification to Audible Magic or AcoustID  
17 or, as I mentioned, in some cases they also do manual  
18 verification.

19 And then once they have identified a file, they enter it  
20 into another table in the database that is for the known  
21 identified files.

22 Q. I believe we've heard some testimony about Audible Magic.  
23 I want to ask you some questions about AcoustID. What is  
24 AcoustID?

25 A. AcoustID is a song identification service. It's an

1 open-source song identification. It's used by products like  
2 VLC, the video player, and by MusicBrainz, Picard, the software  
3 you can use to identify a song that you hear on the radio or if  
4 you have a song in your collection, but it's just labeled as  
5 Track One, you can use that to identify what the song is. And  
6 it also gives back some other metadata like the length of the  
7 recording and the name of the artist and title, and if it came  
8 from an album, the album.

9 Q. Are you aware from public information any companies or  
10 services that use AcoustID?

11 MR. BROPHY: Objection, Your Honor. Outside the scope  
12 of the expert report.

13 MR. O'BEIRNE: Your Honor, she discussed AcoustID in  
14 her report, and it's publicly available information about  
15 services that use it.

16 MR. BROPHY: Your Honor, she has not identified any of  
17 those things in her expert report.

18 THE COURT: I don't have her expert report. I don't  
19 know.

20 MR. BROPHY: In fact, I can point it out to --

21 MR. O'BEIRNE: Your Honor, she discussed her awareness  
22 of AcoustID in --

23 THE COURT: Did she discuss this in her expert report,  
24 yes or no?

25 MR. O'BEIRNE: Yes, the use of AcoustID and her

1 understanding of AcoustID, yes.

2 MR. BROPHY: She did not discuss individual companies  
3 that use AcoustID in her report.

4 MR. O'BEIRNE: Your Honor, they're on notice of her  
5 opinions. These are just additional facts she's aware of that  
6 are public and can be Googled about the use of AcoustID for --

7 THE COURT: Well, the fact that it's public and can be  
8 Googled is different. I mean, anything can be public and  
9 Googled.

10 MR. O'BEIRNE: Fair enough, Your Honor. She discussed  
11 her awareness of AcoustID in --

12 THE COURT: You can talk to her about her awareness,  
13 but not specific instances if it wasn't discussed in her  
14 report.

15 MR. O'BEIRNE: Understood, Your Honor.

16 BY MR. O'BEIRNE:

17 Q. Ms. Frederiksen, are you aware of AcoustID, generally, as a  
18 reliable audio identification service?

19 MR. BROPHY: Objection, Your Honor. Outside the scope  
20 of the expert report.

21 THE COURT: Overruled.

22 A. Yes, I am aware that it is generally regarded as a reliable  
23 way to identify music.

24 MR. O'BEIRNE: Next slide, please.

25 BY MR. O'BEIRNE:

1 Q. What is being portrayed in this slide about the  
2 verification process, Ms. Frederiksen?

3 A. This is a little bit of a drill down on how that  
4 verification works. So the unknown audio song is identified --  
5 or is submitted to a piece of software that generates an audio  
6 fingerprint. And that software analyzes the acoustic  
7 characteristics of the song and generates actually a series of  
8 fingerprints for that particular song.

9 Then those fingerprints are submitted to the AcoustID  
10 service where they're matched against a reference database in  
11 order to identify the content. And then the information is  
12 passed back about whether there's a match or no match. And as  
13 I mentioned before, also some information about, for instance,  
14 the artist and title that was matched.

15 Q. And you'll see Audible Magic is reflected there. Without  
16 getting into the details of Audible Magic, are you aware at  
17 various times Rightscorp did also use Audible Magic?

18 A. I am aware of that fact, yes.

19 Q. I'd like to turn to the next step of the process after  
20 verification, which is the handshake process that Rightscorp  
21 engages in.

22 MR. O'BEIRNE: Next slide, please.

23 BY MR. O'BEIRNE:

24 Q. Could you please walk the jury through the process by which  
25 Rightscorp engages in handshakes with peers over BitTorrent, to

1 detect infringement?

2 A. Sure. This is a separate process from the initial  
3 identification of music. We now have a database of identified  
4 music and the associated torrents that were found, you know, in  
5 relationship to that music.

6 So Rightscorp then uses a system that they call  
7 Infringement Finder. It goes by a couple names, but I'm going  
8 to use Infringement Finder, because it's the clearest. That  
9 system behaves as a normal BitTorrent peer except that it  
10 collects evidence. And so what it does initially is, just as  
11 BitTorrent would, it reaches out to a tracker and gets a list  
12 of the peers that are online that that tracker knows about at  
13 this particular moment in time that are participating in a  
14 specific torrent payload.

15 So the way that works is it sends a request to the tracker  
16 that has the identification of the particular torrent from the  
17 .torrent file, and it gets back a list of peers that the  
18 tracker knows are using that specific torrent and it reported  
19 their activity recently. The Rightscorp system then takes that  
20 list and one by one it goes through it, and it reaches out to  
21 the peer and it performs what's called a handshake.

22 And a handshake consists of first establishing a connection  
23 with the peer so that they can talk to each other, and then it  
24 sends a BitTorrent protocol message that identifies the  
25 torrent --

1 THE COURT: Could you stop for a second, and let's let  
2 that fire engine get by. It's very difficult for the reporter.

3 *(Pause.)*

4 A. So it asks the tracker for the peers for the torrent, gets  
5 the list, and then it goes through the list and for each peer  
6 makes a connection and does what's called a BitTorrent protocol  
7 handshake. So that's the Rightscorp system passing to the peer  
8 the torrent identity that it's interested in, the peer  
9 confirming that it has that torrent and is sending back -- in  
10 that exchange, they each send a bit field too that basically  
11 says these are the pieces I have, and that way the two peers  
12 can decide if they're interested in each other. And if they  
13 are -- so, for instance --

14 MR. BROPHY: Objection, Your Honor. This is more of a  
15 monologue from the witness.

16 THE COURT: Yeah, I think you need to really ask her  
17 specific questions so we don't get into a narrative.

18 MR. O'BEIRNE: It wasn't my intention, Judge. I'll  
19 try to ask more targeted questions.

20 BY MR. O'BEIRNE:

21 Q. Ms. Frederiksen, let's take a step back. You talked about  
22 the handshake from start to finish. I'd like to ask you a  
23 couple more specific questions about it.

24 First of all, you mentioned Infringement Finder being the  
25 name of the part of the Rightscorp code that performs this



1 function. Do you recall that?

2 A. Yes.

3 Q. Did the organization of the code that does these handshakes  
4 or the naming within the Rightscorp code change over time?

5 A. It did.

6 Q. Does that affect in any way your assessment of how that  
7 code functions?

8 A. No, because the code functioned essentially the same way,  
9 regardless of what the name of the program was.

10 Q. And so I believe the first step you talked about was  
11 obtaining IP address information from the trackers. Do you  
12 recall that?

13 A. Correct.

14 Q. Once Rightscorp has that information, what's the initial  
15 next step? What does it do with that tracker information?

16 A. It is stored in memory, in the program and in later  
17 versions of the code they actually passed it as an XML -- I  
18 think it's an XML list, but from one component to another. But  
19 it's basically collects that list so that it can then step  
20 through the list to contact individual peers.

21 Q. Did you review the portion of the Rightscorp code that  
22 obtains IP addresses from the trackers?

23 A. I did, yes.

24 Q. And is it your opinion that the Rightscorp code can  
25 accurately and reliably go to the trackers and obtain IP

1 address information?

2 A. Yes.

3 Q. Then the next step, I believe you described, is taking  
4 those IP addresses and reaching out to engage in handshakes  
5 with those IP addresses, peers at those IP addresses. Do you  
6 recall that?

7 A. Correct.

8 Q. Did you review the part of the code in the Rightscorp  
9 system that takes the IP addresses from the tracker and, in  
10 turn, attempts to connect with those peers?

11 A. Yes, I did.

12 Q. Is it your opinion that that part of the Rightscorp code  
13 can accurately relay the IP address information it got from the  
14 peers to the part of the system that engages in handshakes?

15 A. Yes.

16 Q. And on Friday, I believe you testified that the tracker  
17 data was what you described as transitory. Can you remind the  
18 jury what you meant by that?

19 A. Sure. It means that the tracker provides a list of those  
20 peers that are active right now at this moment in time that  
21 have contacted the tracker in their interaction to get a list  
22 of peers, so it's basically a single point in time when some  
23 group of computers somewhere is participating in the BitTorrent  
24 protocol for a particular payload.

25 Q. In your expert opinion, was it necessary for Rightscorp to

1 save that tracker information once it had obtained the IP  
2 address information and attempted to contact those peers?

3 A. I wouldn't see any purpose in that, no.

4 Q. Why is that?

5 A. Well, again, it represents just a point in time when it got  
6 a list of peers that were active at that moment. That list  
7 changes moment to moment. New peers come onboard, maybe  
8 somebody is done downloading a song, so they shut their  
9 BitTorrent client down, so the peers come and go. And that's  
10 the whole purpose of the tracker is just to be able to provide  
11 information about who is doing it right now.

12 Q. Let's now turn to the first part of a handshake where  
13 Rightscorp sends a message, the Infringement Finder code sends  
14 a message to a peer at an IP address from the tracker. Are you  
15 following me?

16 A. I think so, yes.

17 Q. And I believe you just testified that through the  
18 BitTorrent protocol, Rightscorp asks the peers if it possesses  
19 a hash value of a file it's looking for. Is that fair?

20 A. Approximately. The very first message is the connection,  
21 Will you talk to me? The next message is, Will you talk to me  
22 about this particular info hash. So this particular torrent  
23 payload.

24 Q. Did you examine the part of the Rightscorp code that sends  
25 messages to a BitTorrent peer requesting a connection about a

1 particular info hash?

2 A. Yes.

3 Q. Is it your opinion that the Rightscorp code can accurately  
4 and reliably reach out and connect with other peers and discuss  
5 info hashes with them?

6 A. Yes.

7 Q. I think the next step that you described is receiving  
8 messages back from the peer. What response, if any, during the  
9 handshake does the peer give to Rightscorp?

10 A. It provides a response that includes the info hash, and it  
11 includes this bit field we've talked about that is a  
12 representation in ones and zeros. You can kind of think of it  
13 a table. A one means I have this piece. A zero means I don't  
14 have this piece. And so it's a long string of ones and zeros  
15 that represent the pieces that that particular peer is  
16 advertising to others that it has available.

17 Q. What would happen if Rightscorp attempted to handshake with  
18 a peer that didn't have the torrent hash of the file Rightscorp  
19 was looking for?

20 A. The peer would close the connection.

21 Q. And is that an automatic process in the BitTorrent  
22 protocol?

23 A. Yes.

24 Q. Is the providing bit field information, which pieces the  
25 peer actually has, an automatic process in the BitTorrent

1 protocol?

2 A. It is. There is one alternative where a peer could just  
3 reply, I have full file. That's a newer message that's been  
4 added to the protocol, to just shorten the transmission for  
5 that data. So if it has a full file, it can just say, I have  
6 the full --

7 Q. Setting aside the full file, apart from that kind of  
8 communication, it would typically be a list of the pieces and  
9 which pieces the peer has?

10 A. That is correct.

11 Q. I believe you testified on Friday, but just to make clear  
12 to the jury. What process does a BitTorrent user's system go  
13 through on its side to confirm it has the piece before it  
14 reports to another in a handshake that it has the piece?

15 A. When a BitTorrent client initially gets a piece, it  
16 calculates the SHA-1 hash of that piece and it compares it  
17 against the hash for that specific piece that's a part of the  
18 torrent file to make sure the piece wasn't corrupted in  
19 transmission or wasn't the wrong piece. So it makes sure it  
20 got the piece that it asked for. It stores that piece, and  
21 then it advertises it to other peers. So at that point it  
22 would also send out a message to other peers saying, Hey, I  
23 have this piece now too.

24 Q. Based on your knowledge of BitTorrent, is it fair to say a  
25 peer would not report having a piece unless it has confirmed by

1 hash value that it does, in fact, have that right piece?

2 A. In the normal operation of BitTorrent, that's correct,  
3 because the whole point of this exchange of information is so  
4 that peers know who they can ask for a particular piece.

5 Q. And again, have you examined the actual part of the  
6 Rightscorp code that receives this bit field report from the  
7 peer and records it?

8 A. Yes, I have.

9 Q. And do you believe you have sufficient information to reach  
10 an expert opinion about how that code functions?

11 A. Yes.

12 Q. Were you able to verify that the Rightscorp system can  
13 accurately record bit field information provided from a peer  
14 during a handshake?

15 A. Yes, I can.

16 Q. And based on this verification, are you certain that the  
17 Rightscorp system can accurately obtain and save bit field  
18 information?

19 A. Just to be clear, the actual ones and zeros are saved on a  
20 just transitory -- in a temporary table until they're  
21 evaluated. And then a flag is set in another table that  
22 indicates the results of that evaluation.

23 Q. Thank you for that clarification.

24 Talking first about the initial -- when that bit field  
25 information comes over, are you certain that Rightscorp can

1 accurately receive and analyze that bit field information?

2 A. Yes. At that point it's acting just as any other client  
3 would.

4 Q. And I think you just mentioned this, but after Rightscorp  
5 receives the bit field information, what does its system do to  
6 analyze that bit field information?

7 A. It looks at the bit field information, and it determines  
8 whether it's all ones, and if it is, it sets a flag that  
9 indicates that it has -- that the peer is saying it has the  
10 full file. Otherwise, it sets a different value in that flag  
11 that indicates the peer doesn't have the full file, so it's a  
12 plus one or a minus one depending on what the peer has  
13 indicated it has.

14 Q. Have you examined the portion of the code in the Rightscorp  
15 system that compares the bit fields of known torrent files to  
16 the bit field information that Rightscorp received from a peer?

17 A. Yes. And just to be clear here, at a point in time, one of  
18 the changes in the software was to look just for the bits of a  
19 specific file within a payload because, for instance, if the  
20 torrent payload had multiple files. So in the beginning, it  
21 always checked to see if the full payload was there. At a  
22 point in time later, in late 2015, it started checking if all  
23 of the bits for a particular file were there.

24 I just didn't want to leave any unclearness, because I'm  
25 sure we'll talk about that eventually, but to just lay that

1 foundation.

2 Q. Absolutely. Thank you.

3 Setting aside for the time being whether Rightscorp was  
4 comparing -- analyzing whether there was 100 percent of the  
5 entire payload or 100 percent of part of the payload, did you  
6 review the code that makes that comparison, the peers reporting  
7 these bit fields and my system knows what these bit fields are,  
8 did you review that portion?

9 A. Yes, of course.

10 Q. And did you have enough information to reach an expert  
11 opinion as to whether the code can do that reliably and  
12 accurately?

13 A. Yes, and it does.

14 Q. Thank you. You anticipated my next question.

15 Now, at this point, has the Infringement Finder system  
16 actually downloaded the payload from the other peer?

17 A. Not from the specific peer it's in communication with.  
18 It's just done the handshake at this point.

19 Q. And does that affect your opinion about the reliability of  
20 what Rightscorp is detecting?

21 A. No, because these peers, in order to be flagged as peers  
22 that are participating, they have to be online, they have to  
23 have a BitTorrent client open. They have to have completed the  
24 communication handshake indicating that they have that torrent,  
25 that they have a specific part of the payload that they're



1 offering to share, and then Rightscorp records that  
2 interaction. At that point in time, they record that  
3 interaction.

4 Q. Turning back to the comparison, if Rightscorp's analysis of  
5 the bit field shows that the peer is sharing 100 percent of a  
6 file that Rightscorp is monitoring for infringement of, what  
7 happens next?

8 A. In the detection process?

9 Q. Yes.

10 A. At that point, Rightscorp creates its evidentiary record  
11 that's related to that transaction, so it records things like  
12 the time that it contacted the peer, the IP address and port of  
13 the peer, the particular hash that the two were communicating  
14 about, that Rightscorp was communicating with that particular  
15 peer about, the information about whether it reported the bit  
16 field. And, again, in the temporary table, it actually has the  
17 bit field, but ultimately then it just records whether it was  
18 full or not.

19 Q. Before we go on to talk about the part of the Rightscorp  
20 system that sends notices, I'd like to talk to you about the  
21 concept of choking and unchoking in the BitTorrent protocol.  
22 Are you familiar generally with this concept?

23 A. Of course.

24 Q. I'm going to read you a statement, and I'd like to get your  
25 opinion on it. *"The choke data indicates whether the computer*

1 *is willing to share the song."* In your expert opinion, is that  
2 an accurate description of BitTorrent?

3 A. No. The choke data is more like a traffic control to  
4 control congestion in the TCP connection, so it controls --  
5 like, say that I am talking to ten peers. I might be sharing  
6 with only -- I might be sending a piece or receiving a piece  
7 from four of those, and the rest are in a queue, and then I  
8 rotate that queue periodically.

9 And so choke is like a transitory state. All peers start  
10 choked at the beginning of a conversation, and then after I get  
11 a message that you're interested, I can unchoke you and send  
12 you a piece as soon as I have a free transmission slot to send  
13 you a piece. And so peers will go through choke and unchoke  
14 periodically, so it's not an indicator of whether a peer will  
15 share, but rather an indicator of if it's your turn to go. So  
16 kind of think of a stoplight. You know, you come up to the  
17 stoplight, other traffic comes up to the stoplight. Some of  
18 you get to go right now, some of you wait, and then it's your  
19 turn to go and the other guys wait.

20 Q. Are you familiar with the name Bram Cohen?

21 A. Yes. He's the inventor of BitTorrent.

22 Q. As part of your expert work in this case, did you review  
23 descriptions of how BitTorrent works by Bram Cohen?

24 A. Yes. Those are publicly available at BitTorrent.org.

25 MR. O'BEIRNE: Can you pull up PX 550, please. Just

1 for the witness.

2 THE WITNESS: And could you make it just a little bit  
3 bigger, please, for me?

4 MR. O'BEIRNE: Zoom in, yes.

5 BY MR. O'BEIRNE:

6 Q. When you've had a chance, Ms. Frederiksen, do you recognize  
7 the document at PX 550?

8 A. Yes. This is the BEP-003 document, which is the base  
9 BitTorrent protocol specification.

10 MR. O'BEIRNE: Your Honor, this is a document  
11 Ms. Frederiksen relied on in reaching her opinions. Permission  
12 to publish it to the jury?

13 MR. BROPHY: Your Honor, this is not in evidence.  
14 It's not an exhibit, so I object to that.

15 MR. O'BEIRNE: Experts are allowed to rely on  
16 documents that are not in evidence.

17 THE COURT: The objection is overruled.

18 MR. O'BEIRNE: Could you please publish.

19 BY MR. O'BEIRNE:

20 Q. You mentioned Bram Cohen. Is his name reflected there?

21 A. Yes. He's shown as the author of this particular  
22 specification document.

23 Q. Let's turn to page -- it's five of the exhibit, but  
24 page four of the document, right there, *Peer Protocol*. Do you  
25 see that, Ms. Frederiksen?

1 A. Yes, I do.

2 Q. I'd like to direct your attention to the sentence, "*Peer*  
3 *connections are symmetrical.*"

4 Could you read that to the jury, please?

5 A. "*Peer connections are symmetrical*" --

6 Q. Yeah, I'm sorry. Can read the rest of it?

7 A. "*Messages sent in both directions look the same and data*  
8 *can flow in either direction.*"

9 Q. Is that a description of, generally, the handshake process  
10 and the hash information and the other kinds of communications  
11 you've been describing?

12 A. Yeah, this applies generally to the entire communication  
13 protocol that peers are sending messages back and forth.

14 Q. And then could you read the sentence in the next paragraph,  
15 the second sentence that starts, "*When a peer finishes*"?

16 A. "*When a peer finishes downloading a piece and checks that*  
17 *the hash matches, it announces that it has that piece to all of*  
18 *its peers.*"

19 Q. Is that the process you were describing where before a peer  
20 reports that it has a bit field, it checks the hash to make  
21 sure it's accurately describing what it has?

22 A. That's correct, yes.

23 Q. Let's review further down.

24 Do you recall in this document, ma'am, a description of the  
25 choking function and the choking algorithm within BitTorrent?

1 A. Yes, I do.

2 Q. And do you see there that -- the second sentence in the top  
3 paragraph? Could you read that for the jury, please?

4 A. *"Choking is a notification that no data will be sent until*  
5 *unchoking happens."*

6 Q. Is that what you were describing before about the idea that  
7 it's a traffic light and that choking is a temporary state that  
8 precedes unchoking?

9 A. Yes. That's described in more detail a little bit further  
10 down in the document.

11 Q. And the last sentence there, *"Connections start out choked*  
12 *and not interested."* Do you see that?

13 A. That's correct.

14 Q. Is it fair to say any file that has ever been shared over  
15 the BitTorrent protocol, as described here, was shared in a way  
16 where the person receiving it was initially choked?

17 A. Yes. All peers start out choked.

18 Q. You can go further down in the document, please. And the  
19 top two sentences there, Ms. Frederiksen, could you read that  
20 for the jury?

21 A. Sure. *"Choking is done for several reasons. TCP*  
22 *congestion control behaves very poorly when sending over many*  
23 *connections at once."*

24 Q. The next sentence?

25 A. *"Also choking lets each peer use a tit-for-tatish algorithm*

1 *to ensure that they get a consistent download rate."*

2 Q. And is this what you were describing about the idea that a  
3 peer that is sharing files will be choking and unchoking peers  
4 that they're connected to?

5 A. In part. Though, the tit-for-tat issue is also -- that's  
6 something that's built into the BitTorrent protocol where a  
7 peer will prefer to communicate with a peer that is  
8 reciprocating its requests. And so part of the  
9 choking/unchoking lets you always see if you've got the best  
10 connection to a good partner. And so periodically it changes.  
11 It typically changes about every ten seconds. And then about  
12 every 30 seconds you check to see if somebody new has joined  
13 the swarm who maybe doesn't have any pieces so they can't  
14 reciprocate, but you can -- it gives them a chance to get their  
15 first pieces.

16 Q. Thank you, Ms. Frederiksen.

17 MR. O'BEIRNE: We can take that down.

18 BY MR. O'BEIRNE:

19 Q. Did you run any tests on an active BitTorrent file sharing  
20 to review this idea of choking versus unchoking during the file  
21 share process?

22 A. Yes, I have.

23 Q. Please describe to the jury -- well, did you run -- I'd  
24 like to talk to you about the first test, which involved  
25 sharing files and monitoring network traffic. Do you recall

1 that test?

2 A. I do, yes.

3 Q. Please describe to the jury what you observed in an active  
4 test of BitTorrent.

5 A. I got permission to use some specific torrents to be able  
6 to conduct my testing, from the rights holders. And then I  
7 conducted testing in which I joined the -- I downloaded  
8 BitTorrent software. I opened that particular torrent, or a  
9 particular torrent. And what I was doing in the background was  
10 monitoring the traffic that was going back and forth between my  
11 machine and other machines. So the first thing I see is I  
12 reach out to the tracker and I get the address of some peers,  
13 and then I see my software reaching out to various peers doing  
14 connections, doing handshakes. And then saying that I'm  
15 interested in something, because I didn't have the file, I just  
16 had the torrent, so I'm interested in what you have. And then  
17 the peer unchoking me, and I would request specific pieces, and  
18 the peer would respond by sending those pieces.

19 And I was communicating with multiple peers at the same  
20 time during this test, so I was receiving pieces of the same  
21 payload from different peers until I had the entire payload.  
22 As I was receiving those pieces and verifying them, I was also  
23 sending the messages out to the peers I was connected to that,  
24 oh, I have this piece now. And other peers were requesting  
25 pieces from me, so at the same time I was collecting my

1 payload, I was also sharing pieces with other peers.

2 Q. And during that sharing process, did your system choke and  
3 unchoke periodically peers with whom you were sharing?

4 A. Yes.

5 Q. And in your experience, is that the normal operation of  
6 sharing files over BitTorrent?

7 A. That is. Just as described in the protocol, that's part of  
8 the normal operation of the system.

9 Q. So again, does receiving a choke message from a peer  
10 indicate that that peer is unwilling to share with you?

11 A. No. It just means that it's not my turn to talk to that  
12 peer right now.

13 Q. Let's put aside choking for the time being. Did you  
14 review, in your expert analysis in this case, whether there are  
15 settings that a BitTorrent user could implement to tell  
16 BitTorrent don't share files with other people?

17 A. Some BitTorrent clients that I investigated do have that  
18 setting. I'll refer to it as "parasite mode" just because  
19 different clients call it different things. But basically the  
20 setting says that I'm only going to ask for pieces, and if  
21 somebody asks me for a piece, I'm just not going to give them  
22 anything once I've got my initial download.

23 Q. Did you run any tests to analyze the kind of network  
24 traffic and information that occurs when a BitTorrent peer is  
25 operating in parasite mode?



1 A. Yes, I did.

2 Q. Please explain to the jury what --

3 MR. O'BEIRNE: Actually, could you pull up, but not  
4 show to the jury yet, PX 553. Zoom in at the top third,  
5 please.

6 BY MR. O'BEIRNE:

7 Q. Ma'am, do you recognize this document?

8 A. Yes, I do. This is one of my testing documents that's been  
9 filtered just for BitTorrent messages, from the general network  
10 traffic.

11 Q. And does this PX 553 document information that you observed  
12 during this parasite mode testing?

13 A. If you could scroll down, we didn't have the very top page  
14 of the document. I think we started on page two, so if I could  
15 see how it ends. Yeah, this is the parasite test.

16 Q. Thank you.

17 MR. O'BEIRNE: Your Honor, I offer or request  
18 permission to publish PX 553 to the jury as demonstrative of  
19 the witness's expert testimony.

20 MR. BROPHY: No objection.

21 THE COURT: You may move forward.

22 MR. O'BEIRNE: Pull it down for a second, Connor,  
23 while Ms. Frederiksen describes --

24 BY MR. O'BEIRNE:

25 Q. Generally speaking, could you explain to the jury the test

1 that you set up as to what would occur if a peer were in  
2 parasite mode saying, I'm not going to share files that I have?  
3 A. Yeah, basically what I did is I captured the network  
4 communication between my machine and other machines that were  
5 participating in this BitTorrent protocol. And then I filtered  
6 the communications to get the essential BitTorrent  
7 communication commands like the handshake and the have piece  
8 and the request for a piece and what the other peers were  
9 sending me.

10 So I just filtered it out to have specific communications  
11 between my own computer and other computers that I was  
12 communicating with using BitTorrent.

13 Q. And I think you explained the first step was obtaining the  
14 file to share, is that accurate? In your test?

15 A. I'm not sure what you're asking. Are you asking about  
16 getting the torrent file?

17 Q. Yes. Yes.

18 A. Yeah, I don't think that in this particular diagram I show  
19 my communication with the tracker. So this is from the time I  
20 have opened the torrent on my client and began communicating  
21 with other peers.

22 Q. So I'll orient you to the top of the first page of data  
23 here in PX 553. Do you see there's a date and time stamp and a  
24 source and info there?

25 A. Yes, I do.

1 Q. What does this information reflect?

2 A. Okay. This was the date and time that this particular test  
3 was run. I've run a few tests over the years. Source, the  
4 computer 192.168.1.101 was the IP address of the computer I was  
5 using in the test. And source and destination basically tell  
6 you which way the communication was flowing. So in the first  
7 line, you see that I am the source and I'm reaching out with a  
8 handshake to another computer at 85.226.165.91. And on the  
9 next couple lines you see that I'm also reaching out to three  
10 other computers at the same time or virtually the same time --  
11 it's within the same second -- to make handshakes with those  
12 computers as well.

13 Q. And these handshakes are seeking to obtain the payload of a  
14 torrent file you're looking for?

15 A. Right. And so then you see on the next line down where  
16 there's no highlighting, one of those computers,  
17 179.155.155.139 is reciprocating with its handshake back to me,  
18 so I've said, Hey, I want this torrent. And it's coming back  
19 with the handshake that would have identified for me, as you  
20 see in the next line, the extended bit field information and  
21 the list of pieces it has.

22 Q. And, ma'am, do you see the time stamp there 18:06:17, is  
23 that the time that you started this test?

24 A. Yeah, all of this happens very quickly, these initial  
25 handshakes, so it's all in the same second.

1 Q. 18:06 is military time for 6:06 p.m.?

2 A. That's correct.

3 MR. O'BEIRNE: Could you please scroll to the end of  
4 the data on the last page of the document.

5 BY MR. O'BEIRNE:

6 Q. Ms. Frederiksen, do you see -- this is the last page of the  
7 document. Do you see the time stamp there 18:06 and 59  
8 seconds?

9 A. I see that, yes.

10 Q. This is less than a minute after the test started?

11 A. That's correct.

12 Q. And then you'll note there on the right-hand side, there is  
13 a message handshake extended, *"Have all."* Is that reflecting  
14 that your machine now has all the pieces of the payload?

15 A. No. That happens to be a message coming into me from  
16 201.6.166.3 saying that that particular peer is telling me it  
17 has all pieces.

18 Q. I see. By this time in the test, had your computer  
19 successfully obtained the entire payload you were looking for?

20 A. Yes.

21 Q. In less than a minute?

22 A. Yes.

23 Q. And then at the bottom, you note after this point, *"No*  
24 *further BitTorrent control packets received. The test*  
25 *continued for approximately 14 hours."*

1 Can you explain to the jury what you mean by that?

2 A. Once I had completed -- once my test machine had completed  
3 downloading, when set in parasite mode, it no longer  
4 communicated with any peers. So it didn't receive BitTorrent  
5 control packets or send control packets after that point in  
6 time. And I left the test running for 14 hours to see if there  
7 was any change over time in that communication, you know, if it  
8 just was happenstance that I was doing something for a few  
9 seconds and didn't communicate or if I just didn't communicate.  
10 And in parasite mode, once I have my copy of the song, I'm not  
11 handshaking with anybody.

12 Q. So with the BitTorrent software set not to share in  
13 parasite mode, you called it, your machine did no handshakes  
14 for 14 hours?

15 A. That's correct. And then I terminated the test.

16 Q. Is it your opinion that a BitTorrent user who possessed the  
17 file that Rightscorp was seeking but had their software set not  
18 to share pieces would have engaged in a handshake with  
19 Rightscorp?

20 A. No. Once you're in parasite mode, you're not connecting --  
21 you're not accepting new connections or doing new handshakes.

22 Q. Is it your opinion that a BitTorrent user with its software  
23 set not to share would have provided bit field data to  
24 Rightscorp during a handshake?

25 A. Only when it was first collecting the pieces and seeking to

1 download them from another peer, but then once it had the song,  
2 again, it stops -- stops communicating for the handshake.

3 Q. So a peer that already had the full song would not be  
4 sending bit field information in parasite mode?

5 A. That's correct. And that is based not only just on this  
6 test, but on examining the open-source software for various  
7 publicly available BitTorrent clients like the uTorrent client  
8 and the software that underlies the popular BitTorrent client,  
9 as well as Bram Cohen's software.

10 MR. O'BEIRNE: Thank you, Conner, you can take that  
11 down.

12 BY MR. O'BEIRNE:

13 Q. I'd like to return, Ms. Frederiksen-Cross, to the  
14 discussion about parts of the Rightscorp system and moving from  
15 retaining information from the handshake to sending a notice.  
16 Does that make sense?

17 A. Yes.

18 Q. And on slide 14 -- well, what is being portrayed on slide  
19 14?

20 A. Slide 14 shows some of the requirements on the right-hand  
21 side. I'm going to start there. So initially, the file has  
22 been -- a particular torrent payload has been verified as being  
23 an infringing file. The Infringement Finder software has gone  
24 out and identified a peer or peers distributing a hundred  
25 percent of that file.

1 And then there's one other thing we haven't talked about  
2 yet, and that's that before a notice can be sent, you need to  
3 figure out who to send it to. And so that's the last line  
4 here. The Rightscorp software goes out and determines what ISP  
5 is associated with that particular IP address that it was doing  
6 the detection on. And it does that using the data that I think  
7 you've heard discussed before, the ARIN data that identifies  
8 what blocks of IP addresses have been assigned to what ISPs.

9 And one thing that's actually not shown on here, but once  
10 it identifies the ISP, it also has to pull from its database  
11 the e-mail address that you're supposed to use when you send a  
12 notice to that ISP. And then when it has all that data, it's  
13 ready to send a notice.

14 Q. Ms. Frederiksen-Cross, have you examined the actual code in  
15 the Rightscorp system that performs the query of the ARIN IP  
16 listing to determine which IP address belonged to which ISP?

17 A. I've examined the code that pulls that information, yes.

18 Q. Did you have some additional information to reach an expert  
19 opinion about how that code functions?

20 A. Yeah.

21 Q. And did you verify that the Rightscorp system can  
22 accurately query this list of IP addresses and the  
23 corresponding ISP and obtain that information?

24 A. Yeah. It queries the records that it has for the ISP  
25 addresses, so that would be accurate based on the information

1 for what IP -- or what ISP had been assigned that IP address.

2 Q. Based on this verification, are you certain that the  
3 Rightscorp system can accurately do this?

4 A. Yes.

5 Q. Turning back to slide 14, you see there there's a bullet  
6 *"Peer Distributing 100 percent of the file."* Is that the file  
7 that's going to be the subject of the notice?

8 A. Again, depending on the point in time we're talking about,  
9 it was either the 100 percent of the payload or 100 percent of  
10 the file that is the subject of the notice.

11 Q. But a file being the subject of a notice would be part of  
12 the payload, right, ma'am? It would just be a subset of it?

13 A. Right, correct. If you had a hundred percent of the  
14 payload, of course you have a hundred percent of any file  
15 that's in the payload.

16 Q. Right. So specific to the notice, it's your understanding  
17 the Rightscorp's notices list a file name of what was detected,  
18 correct?

19 A. They list the names associated with the torrent and a file  
20 name of an exemplary file from that -- from that payload that  
21 would be the file -- one of the files they were protecting.

22 Q. Right. And specifically, here -- well, take a step back.

23 There's been some discussion about the matching of the bit  
24 field information obtained from the peer with the bit field  
25 information in Rightscorp's system and whether Rightscorp



1 looked for a hundred percent match of the bit fields it was  
2 monitoring. Do you recall that testimony from Mr. Boswell?

3 A. Yes.

4 Q. And there was discussion about a time period where they  
5 experimented with sending notices based on 10 percent bit field  
6 matching between a known torrent and the bit field records  
7 provided by the other peer. Do you recall that?

8 A. That's correct, yes.

9 Q. Before we talk about that 10 percent, I want to talk about  
10 the hundred percent matching function. Rightscorp sending a  
11 notice only if 100 percent of the part of the payload that is  
12 the file in the notice was detected. Do you follow me?

13 A. I think you're saying we're going to talk about the time  
14 period before they were testing that 10 percent.

15 Q. Yes.

16 A. Yes.

17 Q. And you've reviewed the code, and the Rightscorp code  
18 provides for 100 percent matching between the bit fields that  
19 make up the file in the notice and bit fields reported by the  
20 peer, is that fair?

21 A. That's correct.

22 Q. Was that 100 percent matching code present in Rightscorp's  
23 system throughout the entire -- all the versions of code that  
24 you've ever reviewed?

25 A. Yes, it was.

1 Q. So are you confident that at every time period in which  
2 there was Rightscorp code that you've had a chance to review,  
3 the functionality was there to match 100 percent of the bit  
4 fields reported with a file that was going to be in a notice?

5 A. Yes.

6 Q. There's been some testimony about experimenting with -- I  
7 don't want to use the wrong word -- a patch or some sort of SQL  
8 query on top of the code that would change the threshold down  
9 to 10 percent. Do you recall that?

10 A. Yes.

11 Q. I want to ask you several questions about that 10 percent  
12 portion. In the event that Rightscorp was sending a notice  
13 having detected the user reporting 10 percent of the bit fields  
14 of a known torrent, does that in your mind undermine the  
15 accuracy of Rightscorp's conclusion that the peer was sharing  
16 that torrent?

17 A. No, because whether they have already achieved a hundred  
18 percent of the torrent or whether they are in the process of  
19 downloading it, the peer is still got at least a portion of  
20 that payload, is offering to share it, and is engaged in  
21 copying or distributing that payload, or both.

22 Q. And is it your understanding that the Rightscorp  
23 Infringement Finder system was always recording however much of  
24 the bit fields the peer was reporting that the 10 percent only  
25 occurred within its notice generation system. Is that

1 accurate?

2 A. It occurred as a precursor between the data collection and  
3 the notice generation.

4 Q. And I'm going to make sure I'm being clear. Rightscorp was  
5 always collecting 100 percent of whatever bit fields --

6 MR. BROPHY: Objection, Your Honor, leading.

7 THE COURT: Sustained.

8 BY MR. O'BEIRNE:

9 Q. What percentage of the bit fields the peer was reporting  
10 did Infringement Finder record to analyze?

11 A. It recorded all of the bit field it received.

12 Q. Every time, during the operation of the system?

13 A. Correct. So all of the ones and zeros that the peer sent  
14 it were put in this temporary table.

15 MR. O'BEIRNE: Let's go to the next slide, please.

16 BY MR. O'BEIRNE:

17 Q. Ms. Frederiksen-Cross, you've reviewed the Rightscorp  
18 notices in this case, is that fair?

19 A. I have, yes.

20 Q. And are you generally familiar with the information  
21 contained in the notices that Rightscorp generated?

22 A. Yes.

23 Q. What information from the handshake did Rightscorp provide  
24 to ISPs in the notice process?

25 A. Well, based on the handshake with a specific peer, the

1 Rightscorp system has confirmed that a particular IP address  
2 with which it was communicating had completed that handshake,  
3 and it identifies basically what part of the bit field  
4 corresponds to a particular song or work that it represents in  
5 the notice.

6 And so if you look down kind of the second blob here, for  
7 instance, on the top -- very top line it says, you know, the IP  
8 address that it was communicating with. And then that address  
9 a little bit farther down where you see the file Ten Good In  
10 Goodbye MP3, was infringed by a computer at the address  
11 216.82.220.184. That's the same IP address it's referencing at  
12 the top. So that is the IP address that this particular notice  
13 refers to that reflects that handshake that the Rightscorp  
14 system did with that specific peer.

15 And the data about the file represents the specific file  
16 that it was seeking when engaging in that handshake. And so it  
17 was represented here in a more human-friendly form based on the  
18 information from the torrent about which fields that file  
19 corresponded to, so that the user can know what file they're  
20 being notified of -- or the end recipient of this notice, I  
21 should say, can know what file they're being notified of.

22 Q. Thank you.

23 MR. O'BEIRNE: You can take it down.

24 BY MR. O'BEIRNE:

25 Q. Have you examined the actual code in the Rightscorp system

1 that performs this function of transferring information from  
2 the Infringement Finder detection into a notice?

3 A. Yes.

4 Q. Did you have sufficient information to reach an expert  
5 opinion about how this code functions?

6 A. Yes.

7 Q. Were you able to verify that Rightscorp could accurately  
8 take information it detected from a peer in a handshake and  
9 import it into a notice to be sent to the ISP?

10 A. Yeah, the information that was confirmed through the  
11 handshake with the peer is stored in a table, and then that is  
12 just merged kind of like a mail-merge operation into a template  
13 for the notice. So it takes the IP and moves it in, and the  
14 song information and the date and time information, and merges  
15 it with the general form of the notice to prepare the notice.

16 Q. In your opinion, do these notices accurately reflect  
17 file-sharing activity over BitTorrent detected by Rightscorp?

18 A. Yes, they reflect the activity of peers who are actively  
19 engaged in a particular point in time, as reflected in the  
20 notice, in the exchange of either downloading or uploading  
21 content with respect to a specific torrent hash that has been  
22 verified as containing specific work that Rightscorp has been  
23 hired to monitor and send notices for.

24 Q. Can Rightscorp's system detect when two non-Rightscorp  
25 peers are distributing portions of a payload to each other?

1 A. No, the Rightscorp system doesn't infiltrate the peers to  
2 see what they're doing amongst themselves. It captures the  
3 communication of the Rightscorp system to a specific peer and  
4 the responses that that peer sends back. But there's no way  
5 that it goes into the communication between two other machines.  
6 One of the machines has to be the Rightscorp detection peer.

7 Q. Are you aware of Rightscorp ever claiming it could  
8 infiltrate, to use your word, a communication between two peers  
9 other than Rightscorp?

10 A. I am not aware that any such representation has ever been  
11 made.

12 Q. I'd like to turn to Rightscorp's downloading of files, but  
13 before we do, I just want to make sure your opinions are clear  
14 to the jury.

15 Do you believe that Rightscorp's process of obtaining  
16 copyrighted works to look for, verifying them, engaging in  
17 handshakes, and then sending notices, is accurate and reliable?

18 A. I do believe that, yes.

19 MR. O'BEIRNE: Your Honor, we got started a little  
20 late this morning. Would you like to proceed through our  
21 normal --

22 THE COURT: No. We can take our recess now, if you're  
23 comfortable. I thought you were planning on going a few  
24 minutes longer, but it's okay now.

25 MR. O'BEIRNE: This is a natural time for a break.

1 THE COURT: Let's take our break.

2 COURT SECURITY OFFICER: All rise for the jury.

3 *(10:28 a.m., the jury exits the courtroom.)*

4 \* \* \*

5 *(10:47 a.m.)*

6 COURT SECURITY OFFICER: All rise for the jury.

7 \* \* \*

8 COURT SECURITY OFFICER: All rise.

9 THE COURT: Please be seated. All right. The Court  
10 would note the presence of all counsel as well as the ladies  
11 and gentlemen of the jury.

12 All right, counsel.

13 MR. O'BEIRNE: Thank you, Your Honor.

14 Could you put up slide ten, please.

15 BY MR. O'BEIRNE:

16 Q. Ms. Frederiksen-Cross, before we took the break, we were  
17 talking about the notification system. I'd like to turn your  
18 attention to the part of the Rightscorp system that obtains  
19 downloads from peers and BitTorrent. Are you familiar with  
20 this process?

21 A. Yes. I assume you're talking about the portion that now  
22 obtains the download from a single peer as opposed to the peers  
23 in the swarm?

24 Q. Yes, thank you. Please describe the process by which  
25 Rightscorp -- at least the initial part of the process -- by

1 which Rightscorp determines which peers to contact and reach  
2 out to in order to obtain a file from a single peer.

3 A. Okay. In this process, which is different than the  
4 download process I talked about before, the Rightscorp system  
5 goes to get an IP address that has previously been the subject  
6 of a notice. So it goes back to that notification table and  
7 chooses an IP address there and then it performs the BitTorrent  
8 handshake with that specific peer and attempts to download the  
9 entire work from that specific peer.

10 MR. O'BEIRNE: Slide 16.

11 BY MR. O'BEIRNE:

12 Q. Let's talk about the process, step by step, during which  
13 Rightscorp handshakes with a peer that has already received a  
14 notice. What's the first step of the process once Rightscorp  
15 has contacted that same peer again?

16 A. As before, it establishes a connection with the peer and  
17 then does a BitTorrent handshake to begin the initiation or to  
18 begin -- to initiate the communication about a particular  
19 torrent that was the -- torrent that was the subject of the  
20 notice.

21 Q. Is this the same kind of handshake it engaged with this  
22 peer in which it engaged with the peer in order to generate the  
23 notice?

24 A. Yes, it's the normal BitTorrent protocol handshake.

25 Q. And what happens as the first part of this handshake, after



1 the connection is opened?

2 A. Well, again, as a part of that handshake, the peers send  
3 back and forth the torrent payload that they're talking about  
4 and the bit field. And so they're confirming that they're both  
5 talking about the same payload and then they're exchanging that  
6 bit field information.

7 Q. And the slide says the first step there is that the Grande  
8 user confirms the hash value of the torrent file. Is that the  
9 same step, the same hash confirmation step that occurred in the  
10 initial handshake?

11 A. Yes. It's basically sending back the information that,  
12 yes, I have this torrent payload and here is the pieces I have.  
13 So it is confirming via the torrent info hash that they're  
14 talking about the same thing. And that's the confirmation at  
15 the hash that I'm referring to here.

16 Q. Confirming that they're talking about the same hash that  
17 was the subject of the notice?

18 A. Correct.

19 Q. After the BitTorrent peer that Rightscorp is communicating  
20 with has confirmed that it's still sharing the hash that was  
21 the subject of the notice, then what's the next step?

22 A. The next step would be the Rightscorp sending -- the system  
23 sending an interested message and the peer unchoking it and  
24 then the Rightscorp system requesting or beginning to request  
25 pieces of that payload and the peer providing those pieces.

1 And as it gets the pieces, of course, Rightscorp verifies them  
2 and saves them, to collect all the pieces of the particular  
3 song.

4 Q. What does Samplit 2 do with files that it is able to  
5 download from a peer in this second handshake?

6 A. Whatever is downloaded from the peer is stored in a  
7 database table and then a companion record records information  
8 about when that sample was put in the table and the associated  
9 torrent and the rest of the information. So we get the file  
10 downloaded, and we get the information about the particular  
11 transaction that resulted in downloading that file from that  
12 specific peer; so the torrent hash, the date and time, you  
13 know, the other information.

14 Q. Does it obtain -- I think you just testified to this, but  
15 did it obtain just the part of the payload, or information  
16 about the peer that was sharing the payload?

17 A. Well, it records both the material that it downloaded and  
18 the information about the transaction that resulted in that  
19 particular download, so the hash, you know, who it was talking  
20 to, when it was talking to them; the information that provides  
21 an evidentiary record of that download.

22 Q. And that information about the peer and the hash and the  
23 time, is that saved alongside or connected in some way to the  
24 file in the Rightscorp system in its database?

25 A. Yes. They're connected through a unique identifier that

1 ties the two together.

2 Q. Might there be reasons why -- first of all, are you aware  
3 of the name Samplit in connection with this process?

4 A. Yes.

5 Q. Samplit 2, specifically, within the Rightscorp code?

6 A. Yes.

7 Q. We've been referring to the Samplit part of the system as  
8 the one that goes and tries to get downloads; is that fair?

9 A. Yes.

10 Q. Okay. So are there reasons why Samplit 2, having gotten an  
11 IP address from Rightscorp's database of somebody that received  
12 a notice might be unable to engage in a connection with that  
13 peer?

14 A. Sure. If the peer is not online, you can't get the initial  
15 connection or if it's not running BitTorrent, there's nothing  
16 to respond to the BitTorrent handshake. So in some instances,  
17 you won't be able to complete a connection or the handshake.

18 Q. If Samplit 2 got an IP address from Rightscorp's notice  
19 database and attempted to handshake with that peer and that  
20 peer is not online, can there be a handshake?

21 A. No. If the peer is not online, there can't be a handshake.

22 Q. Do you view that as somehow a problem or a flaw in the  
23 Samplit system, that it can't handshake with peers that aren't  
24 online?

25 A. No, that's just the way the Internet works.

1 Q. And if Samplit attempts to handshake with a peer at that IP  
2 address who is online but not running BitTorrent at that  
3 moment, can there be a handshake?

4 A. No.

5 Q. Would you view it as some -- as a flaw or in some way  
6 undermining Samplit 2's ability to accurately obtain evidence  
7 that it can't handshake with computers that aren't running  
8 BitTorrent?

9 A. No. That's just the way it works.

10 Q. You testified that Samplit is attempting to get all of the  
11 payload that makes up the file that was in the notice, is that  
12 accurate?

13 A. Correct.

14 Q. Are there reasons why Samplit, having engaged in a  
15 handshake and started to get pieces of the file, it may not be  
16 able to get the full file?

17 A. Sure.

18 Q. Please explain those to the jury.

19 A. Once the handshake is established, the system is behaving  
20 like a normal -- semi-normal BitTorrent client, except that  
21 it's requesting pieces from a single peer. If that peer goes  
22 offline, if the guy closes the torrent file, if he closes his  
23 BitTorrent or if he just gets too impatient and decides to talk  
24 to somebody else, you know, he can break the connection. And  
25 that's part of the tit-for-tat algorithm, actually, that if

1 you're not responding, you eventually get shut down by the  
2 other guy. So there's a lot of reasons that that could happen,  
3 and it's not remarkable. I mean, one would expect that.

4 Q. So for example, if Samplit 2 is engaged in a handshake and  
5 obtaining pieces from a peer who loses their Internet  
6 connection, can they continue to get more pieces after that  
7 peer is no longer online?

8 A. No. The peer is not there to give them pieces.

9 Q. Does that impact, in your opinion, the accuracy or the  
10 reliability of what Samplit 2 is doing in trying to download  
11 this file?

12 A. No.

13 Q. Same thing if the peer shuts down BitTorrent. If Samplit 2  
14 is in the middle of a handshake getting pieces from a peer and  
15 that peer turns off BitTorrent, can they continue -- can  
16 Samplit 2 continue getting more pieces?

17 A. No. BitTorrent has to be running with that hash available  
18 to it or, you know, open on the computers that it's sending the  
19 pieces for the pieces to be sent.

20 Q. And if the peer on the other side of a handshake with  
21 Samplit 2 turns off BitTorrent, does that in your opinion  
22 affect the accuracy or reliability of the information that  
23 Samplit 2 got up to that moment?

24 A. No.

25 Q. Ms. Frederiksen-Cross, have you examined the actual code in

1 the Rightscorp system that performs this function of Samplit 2  
2 going to the database, getting an IP address of a peer that got  
3 a notice before, and reaching out to go handshake with that  
4 peer?

5 A. Yes, I have.

6 Q. And do you have enough information to reach an expert  
7 opinion as to whether that code operates accurately and  
8 reliably?

9 A. Yes, I have.

10 Q. And what is that opinion?

11 A. My opinion is that process is accurate and reliable as far  
12 as it can be, given that if the peer goes offline, then the  
13 peer is gone.

14 Q. Turning to the next part, where Samplit 2 engages in a  
15 handshake and confirms the hash information being provided by  
16 the other peer. Have you looked at that part of the code?

17 A. Yes.

18 Q. And have you verified how that part of the code works?

19 A. Yes, again, the two have to be talking about the same hash  
20 or they won't be talking at all, because the recipient peer who  
21 receives the request, if they don't have that hash open, they  
22 don't accept the request.

23 Q. Are you certain, as an expert, that the Rightscorp code can  
24 accurately and reliably engage in handshakes and transmit and  
25 receive that hash value information?

1 A. Yes. So long as the other computer also has the same info  
2 hash open for the same torrent file.

3 Q. And during the handshake, after the hash has been  
4 confirmed -- I think you explained to the jury -- Samplit 2  
5 then asks, can you give me these certain bit fields, these  
6 certain pieces of the file. That's how Samplit communicates  
7 with the other peer, correct?

8 A. Yeah, it requests the pieces by the piece index, so it's  
9 not the bit field, per se, but the index associated with a  
10 particular -- give me piece seven, give me piece eight, give me  
11 piece nine.

12 Q. Have you reviewed the part of the code that requests those  
13 pieces and obtains them back, if possible, from the peer?

14 A. Yes.

15 Q. And do you have an opinion as to whether that part of the  
16 Rightscorp code operates reliably and accurately?

17 A. Yes.

18 Q. What's your opinion?

19 A. Based on my review of the code, it is reliable and  
20 accurate, and it actually behaves very much as any BitTorrent  
21 client would, getting the piece, verifying it, and then saving  
22 it.

23 Q. There's been some testimony in this case about instances  
24 where Samplit downloads different bit fields of the torrent  
25 than are the bit fields that were the subject of the file in

1 the notice. Do you under -- are you familiar with that  
2 possibility?

3 A. Yes.

4 Q. Could you please explain to the jury how that might happen?

5 A. In instances where there's more than one file in a payload,  
6 the Rightscorp system goes out to the peer, and it asks for a  
7 particular set of pieces that constitute a particular file. It  
8 downloads those pieces, but then once it has the information  
9 downloaded, it -- or attempts to download based on the -- it  
10 checks the file name that the peer is reporting against the  
11 file name it believes the file to be. And if there's not an  
12 exact match -- an example might be Beyonce's Greatest Hit, you  
13 know, with the diacritical accent on Beyonce or without, those  
14 are not going to be a match.

15 So if the match of the file name is not the same as what  
16 they have stored in their database, as a way of confirming that  
17 they have communicated with this client, they then download the  
18 first file from the payload, so that could be a different song,  
19 it could be AlgoMart, it could be the discography of what's on  
20 this payload.

21 Q. I'd like to take that explanation and talk about the  
22 different parts of it. So first of all, you talked about the  
23 name matching to determine which bit fields Samplit 2 is  
24 looking for. Do you recall that?

25 A. Yes.



1 Q. That name matching is happening on the Rightscorp side of  
2 the handshake within its own system.

3 MR. BROPHY: Objection, Your Honor, leading.

4 MR. O'BEIRNE: Just trying to clarify the testimony,  
5 Your Honor. I don't believe it's disputed. But withdrawn.

6 BY MR. O'BEIRNE:

7 Q. What is Rightscorp comparing the name in the notice to in  
8 order to determine which bit fields to look for?

9 A. Rightscorp initially takes the song that it's looking for,  
10 identifies which specific pieces in the payload correspond to  
11 that song, but then it also checks the name to confirm that the  
12 name that it is stored in its database in association with a  
13 particular file matches the name that's being returned.

14 Q. It's fair to say -- using the BitTorrent protocol, can  
15 Rightscorp communicate with another peer using names or is it  
16 only bit fields?

17 A. Just bit fields.

18 Q. So at the time that Rightscorp's Samplit 2 system engages  
19 in a handshake, is it asking the peer for bit fields or for a  
20 name?

21 A. When it engages in the handshake, it's initially asking for  
22 the info hash. That's the beginning of the communication.

23 Q. Sure.

24 A. And then it requests specific pieces that correspond to  
25 some particular song in that payload.

1 Q. Regardless, whether it gets the specific bit fields that  
2 match the name of the song in the notice, based on your review  
3 of Samplit 2, any time it's downloading from the peer is it  
4 downloading part of the payload of the torrent file that's been  
5 hash matched?

6 A. Yes, it is.

7 Q. Do you have an opinion as to what extent the downloads  
8 obtained by Rightscorp verify or support the information that  
9 Infringement Finder has obtained?

10 A. Yes, I do.

11 Q. What's that opinion?

12 A. By going back to peers that it has previously contacted and  
13 for which it has previously sent a notice and then attempting  
14 to download that payload, it is verifying that the peer, at  
15 this later point in time, is still online, has still got the  
16 BitTorrent client open, has still got that particular payload  
17 or that torrent file associated with that payload open in its  
18 client software at the same time, and that it is making pieces  
19 of that payload available.

20 Q. Even if Rightscorp never downloaded, never returned to a  
21 peer and engaged in a download, do you still believe that the  
22 notice information of Infringement Finder is accurate and  
23 reliable?

24 A. Yes, I do. May I add something here?

25 THE COURT: No, ma'am. You have to wait for a

1 question.

2 THE WITNESS: Okay.

3 BY MR. O'BEIRNE:

4 Q. Are there other reasons why you believe the notices --  
5 well, for what reason would you tell the jury that the notices  
6 are valid even if there's never a download?

7 A. The notices are created through the interactions with a  
8 BitTorrent peer using the BitTorrent protocol as it's designed  
9 to be used. The file verification that happens during the  
10 notice process is based on the info hash and what the peer  
11 reports. This separate process of downloading a piece of a  
12 file or a whole file is a separate process, it's unrelated to  
13 the notice generation. And so I believe that the notice  
14 generation process itself is accurate because of my  
15 understanding of the BitTorrent client and my study of the  
16 software.

17 This secondary download is a further confirmation that the  
18 system is collecting real information and it works. But I just  
19 wanted to clarify that the second download from a single peer  
20 is actually a separate process that comes -- potentially after  
21 the notice has even been sent even. It's usually closer  
22 aligned in time, but not part of the notice generation process.

23 Q. Ms. Frederiksen-Cross, I'd now like to ask you about the  
24 Rightscorp dashboard.

25 MR. O'BEIRNE: You can take that down, Conner.

1 BY MR. O'BEIRNE:

2 Q. Are you familiar with the dashboard that Rightscorp created  
3 and provided to ISPs?

4 A. Yes, I am.

5 Q. Please explain to the jury. What did you review about the  
6 Rightscorp dashboard?

7 A. With respect to the dashboard, I saw demonstrations of its  
8 operation and I also had available the source code of the  
9 dashboard. And I was even given an opportunity via Webex to  
10 interact with the dashboard. And this was specifically the  
11 dashboard in this case that was provided for Grande.

12 Q. When you reviewed the Grande-specific dashboard, what  
13 information was Rightscorp populating there that Grande could  
14 have reviewed?

15 A. There's a lot of different information there. There's  
16 information on repeat infringers, that is to say IP addresses  
17 that have been detected multiple times across time. And so for  
18 those -- for that part of the dashboard, it would show a list  
19 of IP addresses and how many times they had been detected and  
20 over what periods of time. So the first time detected, last  
21 time detected. And then using the dashboard, you can drill  
22 down on specific IPs from that list and, you know, see  
23 information about when they were sent notices, and by clicking  
24 on that, actually even pull up notices.

25 You also have the ability to look more generally at a

1 particular timeframe and see, you know, for today, what notices  
2 were sent. And again, click on those individual notices. If a  
3 sample had been taken from a specific IP address, you can  
4 actually go all the way by clicking through the dashboard and  
5 get down to a point where you -- there's a button that's "Play  
6 It," and you can actually play that sample that was selected  
7 from the -- from a particular peer.

8       So it will indicate whether or not that peer's payload has  
9 been downloaded via this second Samplit process, and if it has,  
10 it will give you the option to try to play what's there.

11 Q. To be clear, would it give you the option to play the known  
12 torrent that Rightscorp had obtained, that had hash-matched, as  
13 opposed to the actual download that was obtained from the peer?

14 A. I believe that is correct, yes, that it is the copy of the  
15 song that was verified and stored in association with that  
16 hash.

17 Q. And hash-matched in the notice?

18 A. Correct.

19 Q. And also if there were a download, in the download?

20 A. Right.

21 Q. Ms. Frederiksen-Cross, you've talked about some tests that  
22 you performed using BitTorrent yourself apart from the  
23 Rightscorp system. Did you also run any live testing of the  
24 Rightscorp system itself?

25 A. Yes, I did.

1 Q. I'd like to turn your attention to the testing that you  
2 ran -- what was your aim in running testing directed at the  
3 Rightscorp system?

4 A. I wanted to see whether using BitTorrent from my own -- or  
5 one of my own computers, if my activity would be detected, and  
6 if it was detected, would a notice be prepared. And so the  
7 focus of this test was to actually run BitTorrent on a computer  
8 under my control, just a normal BitTorrent client that I  
9 downloaded from the Internet and a torrent I had permission to  
10 run this test on, and run it and then see what happened. And  
11 so --

12 Q. Before we get into the steps in the test, did you reach a  
13 conclusion -- did Rightscorp accurately detect copying of these  
14 works that you downloaded over BitTorrent in this test?

15 A. Not every one, but I did get detected by Rightscorp, and I  
16 had the opportunity to inspect their records related to that  
17 detection, including the notice.

18 Q. Let's turn to the details of the test. First of all, when  
19 did you perform this test or tests?

20 A. I do not recall the specific date. I think it's recorded  
21 in my report, but I don't recall specifically.

22 Q. Do you recall having done a test in 2015 and then also  
23 2018?

24 A. I did tests in both of those timeframes, yes.

25 Q. Did you use the same approach each time?

1 A. Yes.

2 Q. What did you use in your system to document data collected  
3 during these tests?

4 A. I used capture of the network activity that was -- that it  
5 was being conducted during my download of a file, and then my  
6 own notes about when I had started the test and which specific  
7 songs I was using during the tests, so in combination with the  
8 torrent file that I was using, the notes I was taking, and the  
9 actual network traffic that I captured.

10 Q. We have a demonstrative that's up on the screen. I'd like  
11 to walk you through the stages of your test.

12 What was the first step of your test?

13 A. Actually, the first step was to download and install the  
14 BitTorrent client, uTorrent.

15 Q. Okay. And after that?

16 A. Then to download a -- the torrent file that I had been  
17 given permission to use. So I think I got it off of Pirates  
18 Bay, if I remember correctly, but Googled it at the torrent  
19 file and download it from a torrent site. And then I turned on  
20 Dumpcap and Wireshark to monitor the network traffic and to  
21 filter the network traffic. And then I opened --

22 Q. Sorry. To the extent that it's relevant, what are  
23 Wireshark and Dumpcap, briefly for the jury?

24 A. One is a capture program that captures network activity,  
25 and the other allows me to filter that network activity. So,

1 for instance, there are built-in filters for Wireshark that  
2 allow me to filter specifically for BitTorrent protocol  
3 communications, and that way I don't get the noise as it's  
4 talking to my router and things.

5 Q. Once you had the network monitoring software working, what  
6 was the next step of the test?

7 A. To actually then open the torrent file I had downloaded in  
8 my BitTorrent client so that I could begin the activity  
9 associated with the BitTorrent protocol in downloading a file.

10 Q. Were your computers on Grande's network during this test?

11 A. No. I'm based out of Portland, Oregon, so I was on a  
12 different ISP there.

13 Q. So is what's being represented in this demonstrative your  
14 test machine offering to distribute and, in fact, distributing  
15 torrent files and payloads over the Internet -- excuse me, not  
16 torrent files -- payloads over BitTorrent?

17 A. Yeah. First what had to happen is I had to download them,  
18 but as I downloaded pieces, my machine was also distributing  
19 them to other peers, just as one would expect in the normal  
20 BitTorrent operation, so I was receiving pieces and sending  
21 pieces.

22 Q. After you -- about how long was your computer running as  
23 you conducted this test?

24 A. There were various tests. Typically, it took between  
25 20-something seconds and 35 or 40 seconds to download the song



1 completely, but as we mentioned earlier, for the parasite test,  
2 I left it on for much longer. But typically, I left it on for  
3 a few minutes if I was just doing the download test.

4 Q. Just to return quickly to the ISP you were using, does the  
5 fact that you were on a different ISP, in your opinion, in any  
6 way affect the outcome or the reliability of what you observed  
7 in this test?

8 A. No. I mean, what I was observing was just the normal  
9 BitTorrent traffic that goes on between my computer and the  
10 world at large. And in the course of that, I also caught the  
11 communication in one of my tests from Rightscorp where I  
12 happened to be a peer that it sampled.

13 Q. So you just mentioned that next step. So after you monitor  
14 network traffic, what was the next step in order to assess  
15 whether Rightscorp had detected what your computer was doing?

16 A. The next step was to obtain from counsel the list of IP  
17 addresses that Rightscorp was using for its detection software  
18 that day so that I could filter my network traffic to see if I  
19 had received any communication from the Rightscorp system. And  
20 because of that, I was able to verify that, yes, one of their  
21 computers had hit me during this download/upload operation and,  
22 therefore, they would have had a record about my behavior.

23 Q. After confirming that there was an IP address that you  
24 believed would have represented a handshake with Rightscorp,  
25 what was the next information you obtained from Rightscorp?

1 A. Then I asked Rightscorp to send me the extract of the  
2 record that it had created based on that interaction and also  
3 the notice that it had generated based on that reaction, so  
4 both what they had stored in their database about me, you know,  
5 the date and time and the IP address I was using and also the  
6 notice that was prepared.

7 Q. So that Rightscorp could get any records about your  
8 computer, did you provide them your IP address?

9 A. Yeah, I had to do that so that they could look that up.

10 Q. Did you tell Rightscorp which torrent files you claim you  
11 were sharing or any other payload information?

12 A. I think the only thing I gave them was my IP address and  
13 the particular date. I said, you know, if you've got anything  
14 for this IP address on this date.

15 Q. So you didn't share the hash or the payload or any other  
16 BitTorrent information, just the IP address and the date?

17 A. That's correct.

18 Q. What did Rightscorp provide to you from their records about  
19 your testing IP address and the date of your test?

20 A. They were able to provide back to me the record that they  
21 had captured in their databases recording that activity, you  
22 know, my IP and this hash on this date, time. Their date times  
23 are in universal time code, UTC, so I had to translate that to  
24 Pacific Time to be able to match them up with my records of  
25 when I was active and with my PCAPS.

1 Q. Did you compare the information in the notice records  
2 generated by Rightscorp's Infringement Finder with your network  
3 traffic about what your computer was doing?

4 A. Yes.

5 Q. What did that comparison reveal?

6 A. It showed that they had accurately captured the torrent  
7 hash that I was using and they had actually -- or accurately  
8 captured the date and time and the IP address and the port that  
9 I was using during that communication.

10 Q. And to be clear, when you were using BitTorrent during that  
11 test, did every single peer that initially connected to you  
12 start out choked?

13 A. Yeah.

14 Q. And during the course of the test, did your machine  
15 periodically choke and unchoke in the process of sharing files?

16 A. That's correct. And I also started out choked. I mean,  
17 everybody starts out choked and then you send interested  
18 messages and get unchoked and later get choked again. It's  
19 just part of the normal protocol.

20 Q. And while the Rightscorp system was engaged in a handshake  
21 with your testing computer for this hash, was your computer  
22 also sharing that same -- the payload of that hash with other  
23 peers in BitTorrent?

24 A. As soon as I got pieces and verified them, I was sending  
25 out my have messages and other peers were contacting me and

1 downloading those pieces from me.

2 Q. Did you have an opportunity to review and confirm the  
3 accuracy of the infringement record generated by Rightscorp in  
4 connection with your testing?

5 A. Yes, I did.

6 Q. Is it your opinion that the information provided to you by  
7 Rightscorp in connection with this test verifies the accuracy  
8 and reliability of the Rightscorp Infringement Finder system?

9 A. It provides further verification of that, that it works to  
10 me, yes.

11 Q. I believe you mentioned at the beginning of the discussion  
12 of testing, to the jury, Rightscorp only detected some of the  
13 sharing your computer was engaged in; is that fair?

14 A. Yeah, they weren't constantly monitoring me or anything.  
15 It's just like any other peer. They would have to get my  
16 address from a tracker, reach out to me, and then if they  
17 caught me in the act, so to speak, then they created a record.

18 Q. Fair to say your computer was sharing a lot more than the  
19 sharing that was recorded in this Rightscorp test?

20 A. Yeah, because -- like, it didn't capture what I was sending  
21 to other peers outside the Rightscorp peer. It could only have  
22 that little keyhole window of what I was doing when it  
23 contacted me with respect to Rightscorp's computer, but it --  
24 it doesn't see what I'm doing with other peers.

25 Q. What was your conclusion, if any, about the reliability of

1 the Rightscorp system based on this testing in 2015 and 2018?

2 A. Again, it further confirmed my opinion that it can  
3 accurately detect activity and that it can create an accurate  
4 record of that activity that records the date and the IP  
5 address and the payload that's being exchanged.

6 Q. Ms. Frederiksen-Cross, in your expert opinion, does the  
7 Rightscorp system function as Mr. Boswell explained it to the  
8 jury?

9 A. Yeah.

10 Q. Does the Rightscorp system, in your expert opinion,  
11 accurately detect copying of known files over BitTorrent?

12 A. It accurately detects both the upload and the participation  
13 of a peer who may also be downloading.

14 Q. And offers to upload as well?

15 A. Yes.

16 Q. In your opinion, does the Rightscorp system accurately  
17 record BitTorrent file sharing information and send it to ISPs  
18 in a reliable fashion?

19 A. Yes, it does.

20 MR. O'BEIRNE: Pass the witness, Judge.

21 MR. BROPHY: I need just a moment to get set up. If  
22 you don't mind.

23 THE WITNESS: Perfectly okay.

24 (11:25 a.m.)

25 CROSS-EXAMINATION

1 BY MR. BROPHY

2 Q. I'd like to start out by asking how you'd like to be  
3 addressed. In deposition, we've spoken as -- I treated you as  
4 Ms. Frederiksen-Cross. I've heard Ms. Frederiksen today.  
5 Which would you prefer?

6 A. No strong preference either way, whichever is more  
7 convenient to you, counsel.

8 Q. Okay. I'll use Ms. Frederiksen just to keep the number of  
9 words to a minimum, if that's okay?

10 A. You got it.

11 Q. I think we've heard a number of times both today and last  
12 week that your opinion is that the Rightscorp system is  
13 accurate and reliable; is that right?

14 A. That is correct, sir.

15 Q. And that is your opinion?

16 A. Yes.

17 Q. And that's your opinion, top to bottom, every aspect of the  
18 Rightscorp system; is that correct?

19 A. I can think of no exceptions as I sit here.

20 Q. Would you agree with me that your opinion is only as good  
21 as the information that you rely on?

22 A. I think that's a fair statement.

23 Q. I'd like to start by talking about what the Rightscorp  
24 system is. I'm going to say something, and if you disagree  
25 with it, please correct me as you need to, but my understanding

1 of the Rightscorp system is that it's actually a collection of  
2 functions that are manually executed by an operator. Is that  
3 fair to say?

4 A. I wouldn't characterize it entirely that way. I would say  
5 that some functions are manually initiated by an operator. You  
6 start a program. And others, once the program is running,  
7 various components of it operate automatically as the program  
8 moves through the sequence of its operations.

9 Q. So to put it another way, an operator maybe pushes the  
10 first domino and then these other dominoes fall; is that fair  
11 to say?

12 A. I guess you could think of it that way, yeah.

13 Q. As a simple example?

14 A. Yes.

15 Q. But the operator can push multiple initial dominoes to have  
16 multiple rows of dominoes fall; is that fair to say?

17 A. I don't think the Rightscorp system uses dominoes, so I  
18 think it would be helpful if we got more specific about what  
19 actions you're talking about the operator doing versus the  
20 software doing.

21 Q. Sure. Would you agree with me that there are multiple ways  
22 to begin execution of the Rightscorp software? Multiple Go  
23 buttons you can hit, in other words?

24 A. Well, for instance, I guess there's a Go button for the  
25 verification of the songs or a Go button for detection of

1 infringement or a Go button for sampling. So in that sense,  
2 there are multiple Go buttons for different aspects of the  
3 system.

4 Q. And I believe one of those three you identified was a Go  
5 button for detection; is that right?

6 A. For the -- what we've been calling the infringement  
7 detection, yes.

8 Q. The infringement detection. Would you agree with me there  
9 are multiple Go buttons even within that single infringement  
10 detection system?

11 A. It depends at what point in time you're talking about. In  
12 the early days, everything was run from one script that would  
13 start the various processes that we've talked about for  
14 infringement, the reaching out to the tracker and getting a  
15 list of peers and doing the peers.

16 At a later point in time, the function of talking to the  
17 tracker and going out to collect the evidence was separated.  
18 So in that later point, I think must be what you're referring  
19 to, where there's a Go button for talking to the tracker and a  
20 Go button for doing the actual investigation.

21 Q. Later in time, do you agree with me there were multiple Go  
22 buttons you could push to kick off those items as well?

23 A. I'm not sure what you're referring to counsel. If you  
24 could give me an example, I could give you my opinion on it.

25 MR. BROPHY: Sure. Your Honor, may I approach?



1 THE COURT: Of course.

2 BY MR. BROPHY:

3 Q. Ms. Frederiksen, I've handed you a document. Do you recall  
4 serving an opening expert report in this case?

5 A. Yes, sir, I do.

6 Q. And do you recall attaching certain source code and  
7 comments to that report?

8 A. I recall attaching this exhibit, which describes the  
9 specific operation -- or some of the specific operations of the  
10 system as they related to verification of songs and  
11 infringement and the dashboard. As I sit here, I don't recall  
12 if I actually attached the source code. I think I referred to  
13 the source code as it had been produced to the parties.

14 Q. Is it fair for me to say that this document you have in  
15 front of you is a correlation of certain processes within the  
16 Rightscorp system and your description of what they do?

17 A. That is an accurate description, yes.

18 Q. I'd like to turn your attention to page 22 of this  
19 document. And before we get into the details, would you agree  
20 with me that this document is separated into two large  
21 categories: One for the source code as it was operated in  
22 2015, and another for the source code as it was operated in  
23 2018? For the ease of your reference, I think you'll find the  
24 2018 references begin on page 20?

25 A. Yes. I see that to be true.

1 Q. That's your understanding of this document, that it was  
2 broken into those two major categories?

3 A. Yes. And then within each of those categories, the pieces  
4 of verification and dashboard and so on.

5 Q. I'd like to direct your attention to page 22 of this  
6 document, please, which is part of your discussion of the 2018  
7 version of the code. Do you see that?

8 A. I see that page 22 is in that section, yes.

9 Q. And at the very bottom of page 22, on the left side,  
10 there's a column, and within that column there's an indication  
11 *"Searching for infringers."* Do you see that?

12 A. Yes.

13 Q. What did you intend that *"Searching for infringers"* to  
14 refer to?

15 A. This is referring to one of the processes that was present  
16 in the code related to the attempt to detect BitTorrent peers  
17 that were participating in the BitTorrent network for a  
18 particular torrent file.

19 MR. O'BEIRNE: Your Honor, if I may, there's another  
20 additional exhibit of this same kind attached to  
21 Ms. Frederiksen's rebuttal report. For completeness' sake, I  
22 would request -- and to the extent that her opinions are based  
23 on both, I'd like her to be presented with both exhibits rather  
24 than a portion of the information underlying her opinions.

25 MR. BROPHY: Your Honor, my questions relate to this

1 document and this document alone.

2 THE COURT: You can address it on redirect.

3 MR. BROPHY: And I guess, is it possible to use this  
4 ELMO or is that -- is that a hill that we don't want to climb?

5 THE COURT: No.

6 MR. BROPHY: Is that okay?

7 THE COURT: Sure, that's why it's there.

8 MR. BROPHY: Your Honor, may I have permission to  
9 publish this to the jury as it were?

10 THE COURT: Is that in evidence?

11 MR. BROPHY: It's not in evidence, Your Honor.

12 THE COURT: What is it?

13 MR. BROPHY: This is an attachment to her expert  
14 report that we've been discussing.

15 THE COURT: I would assume you don't have an  
16 objection.

17 MR. O'BEIRNE: Your Honor, if we're going to talk  
18 about portions of it, I think we should introduce the whole  
19 exhibit.

20 THE COURT: Well, we're not going to show -- he's  
21 asking questions about a portion of it. You can ask questions  
22 about other portions of it. I don't want him to be reading the  
23 whole thing.

24 MR. O'BEIRNE: Not that he would have to read it,  
25 Judge, just the whole thing would be in evidence for the

1 witness to testify about.

2 THE COURT: I don't think we need to put expert  
3 reports in evidence.

4 MR. BROPHY: I have no intention of doing that, Your  
5 Honor. I just want the jury to be able to follow along as we  
6 look at this document that she created.

7 THE COURT: You can do that.

8 MR. BROPHY: Thank you, Your Honor.

9 BY MR. BROPHY:

10 Q. Ms. Frederiksen-Cross -- Ms. Frederiksen, at the bottom of  
11 the page, do you see where it says "*Searching for infringers*"  
12 there?

13 A. I see that, yes.

14 Q. And that's what you just mentioned, this is an indication  
15 of the -- part of the Rightscorp process that searches for  
16 alleged infringements; is that right?

17 A. This was a part of the code that was a part of both the  
18 2015 and the 2018 code, yes.

19 Q. And in this document, which you attached to your opening  
20 report, you indicate on the right side "*Deamon.java starts with*  
21 *the Test5 server.*" Do you see that?

22 A. I see that, yes.

23 Q. Was that correct?

24 A. That was what was present in the code, yes, that the  
25 Deamon.java started the Test5 process.

1 Q. And upon looking at the code, it was your understanding  
2 that that Test5.java was what was running as part of the  
3 Rightscorp system; is that right?

4 A. That it could be run as part of the Rightscorp system, yes.

5 Q. And when you issued your first expert report in this case,  
6 your opinion was Test5.java was running as part of the  
7 Rightscorp system, correct?

8 A. It was my opinion that Test5.java was a part of the system  
9 that could be used for the detection of the infringing peers or  
10 the peers participating in the BitTorrent network, yes.

11 Q. And not just could be used, but was being used, correct?

12 A. I think at the time I issued my original report, that was  
13 correct.

14 Q. And below where you indicate Daemon.java starts the Test5  
15 server, it says, *"Test5.java function main at line 111 builds a*  
16 *request to invoke torrent request .jsp."* Do you see that?

17 A. Yes.

18 Q. So it was your opinion at the time that the Test5.java  
19 program was performing that functionality; is that correct?

20 A. Certainly the code could perform that functionality. And  
21 at that point in time, it was my understanding that it still  
22 was, because that was the portion that had been used earlier in  
23 time as well.

24 Q. If we go to the next page, this is -- and I'm not going to  
25 go through all of them, but you can see there are various

1 instances in which you identified Test5.java as performing  
2 functions as a part of this infringement detection; is that  
3 correct?

4 A. Correct.

5 Q. And that's because at the time, you believed Test5.java was  
6 being run as a part of the Rightscorp system in 2018, correct?

7 A. That it was still being run, yes.

8 Q. That was correct. Is that right?

9 A. Subsequent to issuing this report, Mr. Boswell testified  
10 that he had split this function into two different components,  
11 Memphis and Pocket, and that now the system was running Memphis  
12 and Pocket, so they were also present in this same code.

13 Q. So we had two functions named Memphis and Pocket; is that  
14 right?

15 A. That's correct. Memphis contacts the tracker, Pocket goes  
16 out to do detection.

17 Q. We also had Test5.java, correct? We had both Memphis and  
18 Pocket and Test5.java, right?

19 A. That is correct.

20 Q. And you didn't know which one was running in 2018; is that  
21 right?

22 A. My initial understanding was that Test5.java was still  
23 running. Later I found, from Mr. Boswell's testimony, that he  
24 had changed that and broken it in half into the Memphis and  
25 Pocket parts and that they were what was, in fact, running in

1 2018.

2 Q. And the only way you could determine which code was running  
3 and which wasn't was by reading Mr. Boswell's testimony; is  
4 that right?

5 A. That's correct. I wasn't provided the cron tables that  
6 would have scheduled any operation.

7 Q. Have you reviewed those cron tables during your engagement  
8 in this case?

9 A. I do not believe the cron tables were produced as a part of  
10 this case.

11 Q. Do you even know if the cron tables exist?

12 A. I don't for certain in this case. They would typically  
13 exist in this kind of a scenario, but I don't for certain that  
14 they have.

15 Q. And as a result, for purposes of this case, the only way we  
16 know which of these programs was running Test5.java were  
17 Memphis and Pocket is by relying on Mr. Boswell's memory; is  
18 that correct?

19 A. To the best of my knowledge, that is accurate, yes.

20 Q. And your original understanding that Test5.java was the  
21 program that was running, that was based on Mr. Boswell's  
22 testimony too, wasn't it?

23 A. I think, based on a conversation with Mr. Boswell, that  
24 nothing had changed in the system, but I don't believe it was  
25 sworn testimony. It was a much more casual conversation at the

1 outset of this litigation.

2 Q. So if I understand you correctly, you spoke with  
3 Mr. Boswell, he told you nothing has changed in the system and,  
4 therefore, you issued an opinion indicating that Test5.java was  
5 running; is that right?

6 A. That's not exactly correct. He had said there had been no  
7 major changes in the code and I mistakenly took that to mean  
8 that none of the names had changed. In fact, there are no  
9 major changes in the code, but the names of certain  
10 components -- he had broken Test5 into two pieces and renamed  
11 the two components.

12 Q. We'll get to whether there are major changes or not later,  
13 but for purposes of this discussion right now, you heard  
14 something from Mr. Boswell and concluded that Test5.java ran,  
15 and then you heard something else from Mr. Boswell and  
16 concluded Memphis and Pocket ran; is that right?

17 A. Yes. He corrected my understanding of which the current  
18 programs were at that point in time. And I addressed that in  
19 my supplemental report then to correct that understanding and  
20 to map out the Memphis and Pocket code as well.

21 Q. And I think we've touched on this already with respect to  
22 the crons, but you're not aware of any records Mr. Boswell or  
23 anyone else at Rightscorp keeps that reflect how the Rightscorp  
24 system is operated at any given time; isn't that right?

25 A. That's not specifically true, counsel. They use -- they've



1 used a source code revision control system since 2016. And I  
2 had at various times produced to me in 2013 or early 2014 the  
3 then current version of the code, and also in 2015 the then  
4 current version of the code, and again in 2018 the then current  
5 version of the code. So for specific periods of time, I know.  
6 And then from the use of the revision control system from 2016  
7 forward, it's very clear what was in existence at those times.

8 Q. Ms. Frederiksen-Cross, do you recall being deposed on  
9 October 18, 2018, in this matter?

10 A. I don't recall the specific date, but I was deposed a  
11 couple times.

12 Q. You recalled spending a day with me in Washington, D.C., in  
13 2018 roughly?

14 A. A charming day, sir, yes.

15 Q. Charming day. I hope so.

16 MR. BROPHY: May I approach again, Your Honor?

17 THE COURT: You may.

18 MR. BROPHY: I'd like to direct the Court's attention  
19 to the October 18, 2018 deposition of Ms. Frederiksen-Cross,  
20 specifically lines 80 -- page 80, lines 3 through 11.

21 BY MR. BROPHY:

22 Q. Ms. Frederiksen, on that day I asked the question, *"Have*  
23 *you seen any records of Mr. Boswell or anyone else at*  
24 *Rightscorp documenting how the Rightscorp system has operated*  
25 *over time?"*

1       And you answered, *"He sometimes puts comments in the*  
2 *headers of his programs about when he makes modifications or*  
3 *when he creates programs, but beyond that, I have not seen --*  
4 *if you're asking if there's a formal record, I am not aware of*  
5 *any. I am not saying they don't exist. I am just saying I am*  
6 *not aware of any."*

7       Do you see that?

8       A.   Yes, I do.

9       Q.   Would you agree with me that Rightscorp and Mr. Boswell do  
10   not retain records of how the Rightscorp system operates on any  
11   given day?

12   A.   With respect to how it is operating on a specific day, that  
13   may be correct, but I think you are asking a slightly different  
14   question before about what's in their code, if I was  
15   understanding your question correctly.

16   Q.   Is it fair for me to say that you need to speak to  
17   Mr. Boswell to understand how the Rightscorp system is  
18   operating?

19   A.   I think that is fair, as he's chief technology officer of  
20   the corporation, that was in his wheelhouse.

21   Q.   Well, it may be in his wheelhouse, but without talking to  
22   him, we don't know how the Rightscorp system is operating;  
23   isn't that right?

24   A.   Well, we know how its source code operates and how that  
25   source code performs its detection activities. There was not a

1 substantive change in how that operated over time in any of the  
2 versions of the code from the 2013, 2014, 2015, 2018. So from  
3 the standpoint of how it works, you would know that.

4 If you're saying which particular component he was running  
5 at any point in time, that's correct, you would need to ask  
6 Mr. Boswell.

7 MR. BROPHY: I'd like to direct the Court's attention  
8 to page 79 of the same deposition, lines five through eight.  
9 Just let me know when you're there.

10 BY MR. BROPHY:

11 Q. In 2018, I asked you the question, *"So you need to speak to*  
12 *Mr. Boswell to understand how the Rightscorp system was*  
13 *operating, correct?"*

14 And your answer was, *"That is my understanding now, yes."*  
15 Do you see that?

16 A. Yes.

17 Q. So we have to talk to Mr. Boswell to understand how the  
18 Rightscorp system is operating; isn't that right?

19 A. How it's operating, yes.

20 Q. We also don't know -- I think we've established already,  
21 but we don't know which functions are operating within the  
22 Rightscorp system unless we talk to Mr. Boswell, correct?

23 A. We know how the code is operating, because we can see that  
24 from the source code. Which specific -- whether he was using  
25 Pocket, Memphis or Test5.java, that we would need input on, at

1 least as far as the records that have been produced to me.

2 Q. And I want to be really clear about this. We're talking  
3 about the fact that we can't know how the Rightscorp system  
4 operated unless we talk to a human, is that right? You have to  
5 talk to a human?

6 A. That, I would dispute, because I think the way the system  
7 operates is revealed in the code. What specific steps the  
8 system does to detect or to verify are revealed in the code.  
9 You might not know which of two programs was running at a  
10 specific time, but they operate with respect to their -- the  
11 methodology they use to collect information in the same way.

12 MR. BROPHY: I'd like to direct the Court's attention  
13 to page 66, lines 3 through 16.

14 BY MR. BROPHY:

15 Q. I asked the question, *"So if I understand your testimony,*  
16 *in order to understand how the Rightscorp system is working at*  
17 *some given time, we have to speak to Mr. Boswell; is that*  
18 *correct?"*

19 And you answer, *"There may be others you could speak to."*  
20 And then I ask, *"But some human needs to be interviewed."*

21 And your answer is, *"In this specific instance, I have not*  
22 *seen other formal records, contemporaneous records, that would*  
23 *say on this day we switched to this process, on this day we did*  
24 *this. Sometimes you get those in production, but in this case*  
25 *I've not seen anything. It's my understanding they weren't*

1     *that formal in their recordkeeping because Mr. Boswell was*  
2     *basically the sole programmer."*

3             Do you see that?

4     A.   Yes.

5     Q.   So we have to talk to a human to understand how the  
6     Rightscorp system is operating on any given day; is that  
7     correct?

8     A.   With respect to which specific component was being run that  
9     way, yes, but with respect to what it was doing in its  
10    interactions with peers, that was the distinction I was making.

11    Q.   Just to clarify, the question that I asked is, *"In order to*  
12    *understand how the Rightscorp system is working at some given*  
13    *time."* I didn't qualify it based on what functions were  
14    running. I said, *"in order to know how the Rightscorp system*  
15    *is working, we have to speak to Mr. Boswell."*

16           And you said, *"We have to talk to some human,"* right?

17    A.   With respect to which components were running and how they  
18    were configured, yes.

19    Q.   How the Rightscorp system is running, right?

20           MR. O'BEIRNE: Objection, Your Honor. Misstates the  
21    testimony she just gave. Asked and answered now.

22           MR. BROPHY: I'll move on, Your Honor.

23    BY MR. BROPHY:

24    Q.   Given what we've just discussed, it's your opinion that the  
25    Rightscorp system is accurate and reliable; is that right?

1 A. Yes, based on my review of the code and my understanding of  
2 the BitTorrent protocol, the actions performed for the  
3 Rightscorp code, whether you're running Pocket, Memphis, or  
4 Test5.java, are accurate and reliable with respect to the  
5 detection of activity on the BitTorrent peer-to-peer network.

6 Q. And your testimony is that there is no difference between  
7 Test5.java and the new Memphis and Pocket functionality, is  
8 that your testimony?

9 A. I didn't say that. There would necessarily be some  
10 differences when you break a component into two components,  
11 obviously the data needs to be passed. You know, it may have  
12 been passed in memory before, and now it's passed through a  
13 table, but the modularization of programs doesn't change their  
14 core functionality with respect to how they operate.

15 Now, there was one change that was introduced in 2015 with  
16 Pocket and Memphis where the code now goes after the -- only  
17 the specific pieces of a particular song when it's evaluating  
18 if the payload, if the peer is offering the entire payload as  
19 opposed to going after all of the -- you know, getting the bit  
20 field for the entire torrent file. So that was a distinction  
21 that was made there that I think is a refinement to the  
22 program.

23 Q. And that refinement, as you describe it, is a refinement  
24 that we only know whether it runs or not based on the testimony  
25 of Mr. Boswell, correct?

1 A. Not quite sure I'm interpreting your question properly.  
2 Are you saying we only know if Pocket Memphis runs based on  
3 Mr. Boswell's testimony?

4 Q. That's my question.

5 A. Both bodies of code were present in the code, so it would  
6 require someone from Rightscorp to say which was currently  
7 being used.

8 Q. So that refinement, as you've described it regarding the  
9 focus on either 100 percent of the payload or 100 percent of an  
10 individual file within that payload, which version of the  
11 system was running, we only know because of Mr. Boswell's  
12 testimony; is that right?

13 A. I believe that to be true, at least based on the records  
14 that have been provided to me. Even though there may be other  
15 records in the case I haven't seen, because I've been focused  
16 on the technical part of the case. But unless that were true,  
17 then we would have to rely on Mr. Boswell.

18 Q. So you've been focusing on the technical side of the case,  
19 but as a result of that, you've been necessarily relying on  
20 Mr. Boswell's testimony regarding the functionality of the  
21 software; is that right?

22 A. The functionality of the software I have determined based  
23 on reading the source code of the software. When a particular  
24 piece of that software was brought into use, that I have relied  
25 on Mr. Boswell for.

1 MR. BROPHY: Your Honor, I'm about to move into a  
2 different topic. Now is a good time for lunch.

3 THE COURT: Yes, this is a good time for lunch. Okay.  
4 Lunch recess. Thank you very much.

5 COURT SECURITY OFFICER: All rise for the jury.

6 *(11:52 a.m., the jury exits the courtroom.)*

7 \* \* \*

8 *(1:33 p.m.)*

9 COURT SECURITY OFFICER: All rise.

10 THE COURT: Please be seated. All right. Is there  
11 anything before we bring the jury in?

12 MR. BROPHY: Not for our side, Your Honor.

13 THE COURT: Okay.

14 MR. GILMORE: Two things, Your Honor. Robert Gilmore  
15 for the plaintiffs.

16 THE COURT: I know who you are.

17 MR. GILMORE: Just for the record. We, as an update  
18 on the Audible Magic materials that Ms. Frederiksen has  
19 considered, we are ready to transmit those. We've already sent  
20 some of them, but the source code materials, we are ready to  
21 send those to the other side, and we've told them we're ready.  
22 We're just waiting for them to send us the list of the names of  
23 the people who will be looking at it, per the stipulation that  
24 we reached with them over the weekend.

25 THE COURT: Okay.



1 MR. GILMORE: So wanted to update on that. And then  
2 we have upcoming some depo designations to which Grande has  
3 objected and some related exhibits as well that it was my  
4 understanding -- I think this is what counsel indicated -- that  
5 we thought it made sense to resolve that before we bring the  
6 jury in since that would be a witness, and then the  
7 designations would be right after Ms. Frederiksen.

8 THE COURT: Okay.

9 MR. HOWENSTINE: Your Honor, to clarify that, there's  
10 essentially one evidentiary issue that affects the testimony of  
11 the next witness and the subsequent deposition testimony that  
12 they intend to play. I guess from our perspective we figured  
13 we would take that up after Ms. Frederiksen --

14 THE COURT: Yeah, let's -- we've got enough -- we have  
15 too many things, too many irons in the fire. Let's not get one  
16 mixed up with the other. So let's wait until this witness  
17 finishes. And then when she's done, we can talk about all  
18 the -- we'll take a break after she leaves the stand, if she  
19 ever leaves the stand. We'll take this up.

20 MR. GILMORE: That makes sense.

21 THE COURT: Maybe we'll do it in the lobby of my  
22 hotel. All right.

23 COURT SECURITY OFFICER: Please rise for the jury.

24 (1:36 p.m., the jury enters the courtroom.)

25 \* \* \*

1 THE COURT: Okay. Thank you. Please be seated.  
2 Okay. Let's continue on.

3 MR. BROPHY: Thank you, Your Honor.

4 BY MR. BROPHY:

5 Q. Ms. Frederiksen, before the break, we were talking about  
6 the operation of the Rightscorp system. Do you recall that?

7 A. Yes, I do, sir.

8 Q. And I believe I started out the afternoon with this notion  
9 of pushing dominoes down and watching them fall, right? Do you  
10 remember that?

11 A. Uh-huh.

12 Q. And we had discussed these two different programs,  
13 Test5.java and the Pocket Memphis programs. Do you recall  
14 that?

15 A. Yes, I do.

16 Q. And I believe your testimony was that those are two  
17 different sets of functions that could run depending upon how  
18 Mr. Boswell hit Go on the program. Do you agree with that?

19 A. They both appeared to be complete and functional systems in  
20 the 2018 code, yes.

21 Q. And I believe you testified that they were what you  
22 characterized as some refinements that were implemented in the  
23 Pocket and Memphis source code that weren't in the Test5.java.  
24 Do you recall?

25 A. I don't remember if I said refinements or reformatting, but

1 they were carved up into multiple pieces.

2 Q. There's some different functionality between the Pocket and  
3 Memphis on the one hand and Test5.java on the other; is that  
4 right?

5 A. With respect to the testing of the bit fields, yes,  
6 specifically.

7 Q. So to carry on with my silly domino analogy, would you  
8 agree with me that in a simplistic way, Mr. Boswell is sitting  
9 at his computer, and he has the ability to push down one or the  
10 other set of dominoes. If he pushes the first domino on this  
11 side, it's going to start a cascade that runs the Test5.java  
12 and other functions, and if he pushes down this domino over  
13 here, it's going to knock down the Pocket in Memphis and other  
14 functions down a different pathway; is that right?

15 A. It would execute different sets of code depending on what  
16 set of code he started, yes.

17 Q. And you agree with me there could be logs that keep track  
18 of which dominoes are pushed down and which ones fall in what  
19 order; is that right?

20 A. Hypothetically, there could be logs. I'm not aware of  
21 whether or not there are any. I have seen none produced.

22 Q. Thank you. I'd like to switch gears now and talk about  
23 what I'll call the "ingestion" process. Does that phrase have  
24 a meaning to you?

25 A. As I use it, it's the process whereby Rightscorp obtains

1 the initial copies of files from the Internet and then verifies  
2 those files. So I assume that that's the way you're using it  
3 as well.

4 Q. Yes, ma'am. And just to make sure the jury is clear on  
5 this, I'm talking about a situation not where we're downloading  
6 a song from an individual computer, but rather, when Rightscorp  
7 first finds a file that it thinks is infringing on the  
8 Internet, it goes out to the swarm and pulls down bits and  
9 pieces of that song from everywhere; is that right?

10 A. That's correct. We're on the same page with the  
11 terminology.

12 Q. Great. And after that file is pulled down from the swarm,  
13 Rightscorp has to check whether the file it got is a copy of  
14 some copyrighted work; is that right?

15 A. Well, they have to check if it's a file they've been  
16 protected to hire, and so...

17 Q. Hired to protect?

18 A. Yes.

19 Q. Yes, ma'am.

20 A. Thank you.

21 Q. Great. And I believe earlier you testified there are a  
22 number of different ways in which the Rightscorp system can  
23 perform that check of the song they downloaded from the swarm  
24 against some copyrighted work. Do you recall that testimony?

25 A. Yes.

1 Q. One of the ways is by running something called Audible  
2 Magic software; is that right?

3 A. That's in the code, yes.

4 Q. Another one is AcoustID; is that right?

5 A. That's also an automated process in the code, yes.

6 Q. Will you agree with me that there are also instances in  
7 which Rightscorp has done what they call a manual verification  
8 process?

9 A. That is my understanding.

10 Q. What is your understanding of that manual verification  
11 process, please?

12 A. That a human being would take the downloaded song and play  
13 it and listen to a copy of the song and be able to understand  
14 if it was the same song or not. So actually it was done  
15 through a human listening to the song.

16 Q. So is it your testimony to the jury today that the manual  
17 verification process that Rightscorp operated was accurate and  
18 reliable?

19 A. I would find no reason for it not to be, but because that  
20 was a manual process, it was not something that I directly  
21 analyzed computer data for, but I've seen no evidence of any  
22 inaccuracy.

23 Q. Is it your understanding that Rightscorp would perform this  
24 manual verification process by reaching out to, for example,  
25 YouTube and listening to a song on YouTube?

1 A. My understanding is that they would look on YouTube for the  
2 official version of the song and listen to the song that they  
3 were trying to identify. So, yes, I think that YouTube was  
4 involved in at least some cases.

5 Q. When you said that they would go out and listen to the  
6 official version, what do you mean by that?

7 A. That was the information that was provided to me. I'm  
8 aware of work that I have done for YouTube that often companies  
9 will provide either full songs or partial songs as sort of a  
10 teaser for an album that aren't officially released by the  
11 music companies. And so that was my understanding of what he  
12 was talking about.

13 Q. You don't have any records of which songs Rightscorp  
14 reached out and listened to; is that right?

15 A. I do not believe I have seen a specific indicator for which  
16 songs were verified manually. And I also understand that they  
17 sometime did this as a quality control, even after they had  
18 received identification, to just check the identification.

19 Q. Right. And I want to focus specifically not on those  
20 validations, but rather, the manual process where there's no  
21 Audible Magic or AcoustID. It's just a human listening to a  
22 song saying, yes, this is a copy. Is that fair?

23 A. Sure.

24 Q. Okay. So just to make sure your testimony is clear, you  
25 weren't provided with a list of the links to all the songs that

1 Rightscorp went out and listened to on YouTube to do  
2 verifications; is that right?

3 A. Not exactly sure what you're asking for. You're asking did  
4 I have, like, the URLs of the songs they listened to on  
5 YouTube?

6 Q. Right. So let's say that there's a song that Rightscorp  
7 downloads from the swarm, a new song, they don't know what it  
8 is or maybe they suspect what it is and they have to do this  
9 manual verification process. And so they're going to go to  
10 YouTube and listen to what they think is potentially a copy of  
11 the song. Are you with me so far?

12 A. Got you so far.

13 Q. You don't know what song they listened to for any  
14 particular song that was later ingested into Rightscorp system;  
15 is that right?

16 A. My recollection is that on one or two occasions via Webex,  
17 I saw demonstration of the manual process, but I didn't receive  
18 any comprehensive list of what songs that they listened to, if  
19 that -- I think that's the thrust of your question.

20 Q. That is the thrust of my point. And I guess to put it a  
21 different way, if I were to hand you a notice for a particular  
22 song and represent to you that that song was ingested using the  
23 manual process, you couldn't tell me what YouTube song the  
24 Rightscorp person listened to to determine whether it was a  
25 copy; is that right?

1 A. That is correct, with just the proviso that once they  
2 started using Audible Magic and AcoustID in the 2013/2014  
3 timeframe, it's my understanding that everything went through  
4 those verifications, but then they sometimes did QA spot  
5 checks, but for an earlier song. I wouldn't be able to tell  
6 you what link they listened to.

7 Q. And again, I'm just focusing on those manual verifications.  
8 So my understanding of your testimony is that for the manual  
9 verifications, you can't identify for me what YouTube song was  
10 listened to to validate any particular song that Rightscorp  
11 ingested; is that correct?

12 A. As best I recall, I did not receive any materials that  
13 would allow me to make that assessment for the manual  
14 verifications.

15 Q. And again, just to make sure we're all on the same page,  
16 you haven't seen any logs either that reflect which links on  
17 YouTube Rightscorp used to validate certain songs that it  
18 downloaded; is that right?

19 A. That's correct, yes. I haven't seen anything that would  
20 tie those two together.

21 Q. I believe you mentioned that you received a demonstration  
22 of how that manual verification process was performed; is that  
23 right?

24 A. Yeah, I think that was in the context of the earlier case.  
25 I mean, that was something that had already happened before.



1 Q. Do you recall who gave you that demonstration?

2 A. I don't recall specifically. It's likely it was  
3 Mr. Boswell, but I do not recall specifically.

4 Q. Do you still have that deposition transcript in front of  
5 you?

6 A. Yes.

7 Q. Do you recall giving testimony in this case about who gave  
8 you that demonstration?

9 A. I don't.

10 Q. I direct your attention to page 188 of your deposition  
11 transcript, lines 8 through 17.

12 A. Sorry. You said 8 through 17?

13 Q. Yes. Page 188, lines 8 through 17. Do you see that?

14 A. I do, yes.

15 Q. Feel free to review that. Does that help you recall who  
16 gave you the demonstration?

17 A. Yes. Back in 2018, it was a little closer in time, and I  
18 did recall that it was Mr. Boswell who did --

19 Q. So Mr. Boswell is the one who gave you that demonstration,  
20 right?

21 A. Yes.

22 Q. Just want to make sure the record is clear.

23 A. Sorry. I didn't speak loud enough. Yes.

24 Q. Did you review Mr. Boswell's depositions in this case  
25 before rendering your opinions?

1 A. I believe that I have seen all of them.

2 Q. Are you aware that he is not the person who performed the  
3 manual verification process within Rightscorp?

4 A. My understanding is that they had a dedicated team of one  
5 or more persons who routinely did that back when that was the  
6 practice.

7 Q. Are you aware that Mr. Boswell identified individuals who  
8 were responsible for doing that manual verification process?

9 A. I don't recall as I sit here if he did or did not.

10 Q. If I were to give you the names Jeff or Victor, do those  
11 names ring a bell, by any chance?

12 A. Afraid not.

13 Q. Okay. Needless to say, you didn't reach out to any other  
14 individuals at Rightscorp to learn how that manual verification  
15 process was actually being performed; is that right?

16 A. No, I didn't talk to the people who routinely did the  
17 manual process.

18 Q. So the only person you talked to was Mr. Boswell; is that  
19 right?

20 A. Mr. Boswell and to a lesser extent, Mr. Steele, but not  
21 about this topic.

22 Q. So with respect to this topic, and how manual verifications  
23 were performed, you exclusively talked to Mr. Boswell from  
24 Rightscorp; is that right?

25 A. I believe that to be correct, counsel.

1 Q. Just to sum that up, you haven't seen any logs of which  
2 files were used to do the validation; is that right?

3 A. To the best of my belief as I sit here, that is correct.

4 Q. And therefore, you can't testify about which songs were  
5 used to do individual validations of songs that Rightscorp  
6 downloaded; is that correct?

7 A. From the manual verifications; that is correct.

8 Q. And you never reached out to the individuals who actually  
9 performed that validation testing to make sure that they were  
10 doing it the way Mr. Boswell indicated; is that right?

11 A. Mr. Boswell presented all of the demonstrations that I saw.

12 Q. And nevertheless, it's your opinion that the manual  
13 verification that Rightscorp was performing was accurate and  
14 reliable; is that right?

15 A. As I said before, counsel, it's my opinion that I've seen  
16 no evidence that would suggest otherwise.

17 Q. You've seen no evidence at all other than Mr. Boswell's  
18 demonstration, right?

19 A. With respect to something that was identified manually,  
20 that is correct.

21 Q. I'd like to switch gears and talk a little bit about  
22 downloaded songs. I believe you gave testimony with  
23 Mr. O'Beirne that related to a hard drive that was provided to  
24 you that contained songs allegedly downloaded from Grande  
25 customers. Do you recall that?

1 A. It contained files downloaded from Grande customers, so  
2 they were both songs and then things like cover art and  
3 discographies as well.

4 Q. Is it your opinion that those songs were downloaded from  
5 Grande customers? Are you here testifying to that today?

6 A. I believe that's to be addressed by another witness. What  
7 I can say about the disk is that the format of the disk was  
8 such that songs were placed in directories according to the IP  
9 address that they were downloaded from, which is consistent  
10 with what I understand to have been the requirement or  
11 specification for those songs. And as best I recall, they were  
12 downloaded over a couple-month period, I want to say, based on  
13 the dates or they were copied over a couple-month period to  
14 that particular disk.

15 Q. So I guess my question is, are you here today to -- let me  
16 ask that a little bit of a different way.

17 Is it your intention to offer opinion testimony in this  
18 case that those songs and files on that hard drive actually  
19 came from Grande customer computers?

20 A. It is my understanding that they do. And based on all of  
21 the evidence I have reviewed, I saw nothing to contradict that,  
22 but I didn't see that disk created. And so, you know, what I  
23 have been told about the creation of that disk and everything  
24 about the formatting of that disk and the arrangement of the  
25 data on that disk is consistent with what I have been told, but

1 I didn't actually see its creation, if that clarifies anything  
2 for you.

3 Q. You said that based on all the evidence you've seen, you  
4 believe those songs came from Grande's customers; is that  
5 right?

6 A. I believe that to be true, based on the sworn testimony I  
7 have reviewed, the declarations I have reviewed of various  
8 witnesses, and the fact that I found nothing inconsistent with  
9 that in my review of the disk.

10 Q. Isn't it true that the only evidence you have of where  
11 those songs and files came from is Mr. Boswell's testimony?

12 A. That and the fact that those songs are organized and  
13 arranged into specific folders, as was required for that  
14 specific task that identified the IP addresses. And that the  
15 IP addresses were consistent with Grande IP addresses.

16 MR. BROPHY: I'd like to direct the Court's attention  
17 to page 142 of your deposition, lines 15 through page 143, line  
18 17.

19 THE WITNESS: I'm sorry. Could you give me the lines  
20 again, counsel?

21 BY MR. BROPHY:

22 Q. Yes, ma'am. It's page 142, line 15 through 143, line 17.

23 A. Thank you. Okay.

24 Q. I'm waiting for my colleague to finish reading the passage.

25 In that deposition I asked you, *"Do you know who downloaded*

1     *those files?"*

2             And your answer was, *"The Rightscorp software downloaded*  
3 *those files."*

4             I then asked you, *"How do you know that?"*

5             And you answered, *"That's a really good question. I know*  
6 *that based on the representations of how these files were*  
7 *produced and where they were produced from in the context of*  
8 *the litigation."*

9             And I asked, *"I'm sorry. Who made those representations to*  
10 *you?"*

11             And you answered, *"That information was provided, I*  
12 *believe, by Mr. Boswell, in terms of, you know, which databases*  
13 *he went to to collect them."*

14             And then I asked, *"So it's your testimony that Mr. Boswell*  
15 *told you he extracted these files from some part of the*  
16 *Rightscorp database?"*

17             And you answered, *"The copies, the part of the database*  
18 *that retains the evidentiary copies, as opposed to the music*  
19 *sample copies, yes."*

20             MR. O'BEIRNE: Objection, Your Honor. This is  
21 improper impeachment. This is not inconsistent with the  
22 testimony that she just gave.

23             MR. BROPHY: Your Honor, this testimony is that she  
24 only had information from Mr. Boswell, and she's testified --

25             THE COURT: The objection is overruled. The jury can

1 parse that out.

2 BY MR. BROPHY:

3 Q. So continuing, I asked, *"So it's your testimony that*  
4 *Mr. Boswell told you he extracted these files from some part of*  
5 *the Rightscorp database?"*

6 Your answer was, *"The copies, the part of the database that*  
7 *retains the evidentiary copies, as opposed to the music sample*  
8 *copies, yes."*

9 And then I asked, *"When did he have that conversation with*  
10 *you?"*

11 And you indicated, *"It was a phone conversation. I don't*  
12 *recall. It would have been once we received the media when I*  
13 *asked counsel if they could set up a call to say 'What is this*  
14 *stuff? Where did it come from?' Because when I initially*  
15 *received it, I knew there were some samples. I could see that,*  
16 *but I didn't know what their providence was."*

17 Do you see that?

18 A. Yes.

19 Q. So you got a list of song files, a hard drive of song  
20 files; is that right?

21 A. I got a hard drive that contained the song files -- well,  
22 all of the files that had been downloaded from Grande  
23 customers.

24 Q. And you did not know what the providence of those files  
25 was, right? Meaning you don't know where they came from; is

1 that right?

2 A. When I got the hard drive, there wasn't a cover letter  
3 other than to identify a Bates number that we were to use to  
4 refer to it as, so I wanted to know what these materials were  
5 so I would know what analysis I might perform with them.

6 Q. And you got your exclusive answer from Mr. Boswell, right?

7 A. Through counsel on that call, yes.

8 Q. Well, you indicate here that it was Mr. Boswell. He told  
9 you on a phone call, right?

10 A. Right. Counsel set up the call, and I said, "*What is this*  
11 *stuff? Where did it come from?*" And he explained that it was  
12 from the music samples. Remember, before we talked about when  
13 they download samples they also record information. And in  
14 this case, it was the samples that came from single peers on  
15 the Grande network as opposed to the other music that's used  
16 for the ingestion verification.

17 Q. So in your answers that I just read, you've mentioned that  
18 they were extracted from some part of a Rightscorp database.

19 Do you recall that?

20 A. Yes.

21 Q. And you specifically said it came from the evidentiary  
22 copies as opposed to the music sample copies. Do you remember  
23 that?

24 A. Right. The distinction I was making there is the music  
25 samples being the ones that were used when they identify and



1 ingest an unknown work versus the evidentiary copies being the  
2 ones that are retrieved from single peers.

3 Q. So in other words, Rightscorp has at least one copy of the  
4 song that went out and got from the swarm. Let's use  
5 Aerosmith's *Angel* as an example. So Rightscorp goes out to the  
6 swarm and gets a copy of Aerosmith's *Angel* and downloads it to  
7 a hard drive, right? That's early step in the process,  
8 correct?

9 A. Right. And then submits it for AcoustID verification.

10 Q. Or manual verification, right?

11 A. Or Audible Magic. It verifies the copy.

12 Q. And separately and apart from that, after Rightscorp claims  
13 it detects an instance of music sharing, sometimes Samplit 2  
14 goes out and tries to pull that song, that same song down from  
15 an individual customer; is that right?

16 A. Right. All of the pieces of the song from one customer.

17 Q. So now we've got two copies of the same song. We've got  
18 one copy from the swarm and allegedly we have another copy from  
19 an individual customer; is that right?

20 A. Correct.

21 Q. And your comment here in this answer I read is that  
22 Mr. Boswell told you the songs came from the evidentiary  
23 records, not from the music samples that Rightscorp has, right?

24 A. Correct.

25 Q. And that's important, because if Mr. Boswell had pulled

1 them from the music samples, those aren't songs that came from  
2 Grande customers. They're just songs Rightscorp pulled from  
3 the Internet at large, right?

4 A. Yeah, they're entire torrent payloads that were pulled from  
5 the Internet at large prior to being verified.

6 Q. And not from Grande's individual customers, right?

7 A. Correct. Or presumably correct.

8 Q. Well, always correct, right? Because it gets it from the  
9 swarm, not from an individual customer?

10 A. Hypothetically, it could come from an individual customer,  
11 but it's unlikely that in that process that would happen.

12 Q. Very, very unlikely. Would you agree with me?

13 A. Depends on the song and how many people are trading it, but  
14 probably unlikely at least.

15 Q. And you mentioned that there are these different databases  
16 within Rightscorp's system that house the songs that were  
17 pulled from the swarm and also separately the songs that were  
18 plucked from individual customers' computers, right? Those are  
19 two different databases?

20 A. Correct.

21 Q. And Mr. Boswell represented to you that he pulled from the  
22 evidentiary database and not from the sample database, right?

23 A. That's correct, yes.

24 Q. And you could have looked at the databases to verify that  
25 that was true, right?

1 A. I'm trying to recall which specific information came -- was  
2 provided to me from each database. But, yes, the database  
3 records would have indicated the date that those were, for  
4 instance, first put into the database. In the case of the  
5 downloaded samples that were from the peers at large or from  
6 the samples that were collected from a single peer, there would  
7 similarly be a record that indicated the peer and the date/time  
8 that that download occurred.

9 Q. So you could have gone out and looked at that data to  
10 verify where the songs came from, right?

11 A. Had I had access to that data and some way of querying it,  
12 yes.

13 Q. But you did not do that, did you?

14 A. I do not recall that we did that.

15 Q. So the only basis for your testimony that these songs and  
16 files on this hard drive came from the evidentiary database is  
17 Mr. Boswell's say-so; isn't that right?

18 A. Mr. Boswell's say-so, but I would also observe that because  
19 the disks sometimes contained fragmentary files or other  
20 inclusions like the album art and things associated with the  
21 attempted download, everything that I saw on that disk was  
22 consistent with his testimony about how that disk was created  
23 and what it contained.

24 Q. So if I understand you correctly, because the hard drive  
25 contained some incomplete files, that indicates it came from

1 the evidentiary database; is that right?

2 A. That would be consistent with his testimony about the  
3 collection of those files and the issues that we've already  
4 discussed, that sometimes in downloading from a single peer,  
5 you won't get the complete file, whereas downloading from the  
6 swarm as a whole, you generally will.

7 Q. But that's not true with respect to the complete files,  
8 right? We have no idea where those came from, whether it's the  
9 sample's hard drive database or the evidentiary database other  
10 than Mr. Boswell's say-so; isn't that right?

11 A. I'm thinking about that. As I sit here, I know that there  
12 are records in the database and that some of the code that I  
13 saw in the Rightscorp sql.txt file, I believe it was, was  
14 consistent with a process that would extract from the music  
15 samples database and, you know, put things on a hard drive or  
16 external drive in the folder structure that I observed. So the  
17 code that I saw was also consistent with what I saw there.

18 Q. You did not review the database to verify where those songs  
19 came from; is that correct?

20 A. I do not recall having direct access to that database.

21 Q. Do you recall not doing it or do you simply not remember  
22 whether you did it or not?

23 A. As I sit here, I do not recall that I had access to that  
24 database directly, and I do not recall specifically going out  
25 there to verify that each and every file on that hard drive was

1 represented in that database.

2 MR. BROPHY: I'm going to direct the Court's attention  
3 to page 143 of your deposition, line 22 through 144, line 3.

4 THE WITNESS: I'm sorry, 143 starting which line?

5 BY MR. BROPHY:

6 Q. 143, line 22, through 144, line 3. Do you see that?

7 A. Yes, I see that.

8 Q. I asked the question, *"Did you specifically review the*  
9 *Rightscorp database and where those files reside within the*  
10 *database?"*

11 And your answer was, *"In other words, did I go out for each*  
12 *file and check that it was really in the database?"*

13 I asked, *"Right."*

14 And you said, *"I did not do that, no."*

15 Do you see that?

16 A. Yes.

17 Q. Do you agree with me you did not check the database to know  
18 where those song files came from?

19 A. As I said, counsel, as I sit here today, I don't recall  
20 doing that. And this was much closer in time and I said I  
21 didn't do it. So I think that's consistent.

22 Q. While we're on the topic of downloads, you'll agree with me  
23 that Rightscorp doesn't keep track of instances in which it  
24 tries to go out and pluck songs from an individual computer and  
25 failed to do so; is that right?

1 A. That is my understanding.

2 Q. Your understanding is they do not keep records of those  
3 failed attempts, correct?

4 A. That's correct.

5 Q. Okay. Let's switch gears. I'm going to talk about bit  
6 field data for a little bit.

7 Your testimony has been that Rightscorp collects bit field  
8 data from individual computers when it goes out and determines  
9 whether they're sharing music; is that right?

10 A. When it does that handshake, yes.

11 Q. So just to make sure we're oriented in the process,  
12 Rightscorp has already downloaded a song from the swarm, it's  
13 done whatever verification it's going to do to conclude that  
14 it's a copy, including potentially that manual verification  
15 process, and then it goes out and tries to find that same song  
16 on computers, right?

17 A. Well, specifically, it goes out to the tracker, gets a list  
18 of peers that are at that moment participating in that  
19 particular payload, and then it reaches out to each peer to do  
20 that handshake that I spoke of.

21 Q. So it goes through that list of computers and contacts each  
22 of them, tries to handshake, and tries to obtain bit field data  
23 from each of those computers; is that right?

24 A. That's correct, yes.

25 Q. And the purpose of reaching out and trying to get that bit

1 field data is to determine whether that computer has the songs  
2 in question, right?

3 A. Whether that computer is online and currently active and  
4 reporting that it has those songs and is willing to share them,  
5 yes.

6 Q. And the bit field data indicates -- how do I put this? I  
7 think you've already testified to this and you probably did a  
8 good job of explaining it. But a bit field indicates which  
9 chunks of an overall payload exist on a particular computer; is  
10 that right?

11 A. It indicates which chunks the peer is self-reporting that  
12 it has and that it is willing to share at that particular  
13 moment in time. As I mentioned, over time that bit field will  
14 change and so a peer sends "have" messages when it gets a new  
15 piece, but at the specific point in time of that conversation,  
16 it's the pieces the peer is reporting that it has and can  
17 share.

18 Q. Great. Thank you. And it is your position in this case  
19 that Rightscorp reached out to Grande customer computers and  
20 obtained the bit field data from them, is that correct?

21 A. That is what the evidence shows and that is how the  
22 software operates, yes.

23 MR. BROPHY: Your Honor, may I approach?

24 THE COURT: Sure.

25 MR. BROPHY: More paper.

1 THE WITNESS: Thank you, counsel.

2 BY MR. BROPHY:

3 Q. Ms. Frederiksen, do you recall serving an expert report in  
4 this case on July 27, 2018?

5 A. Yes, I believe this was my opening expert report.

6 Q. Your opening expert report. Is that the document you have  
7 in front of you?

8 A. Yes, it is.

9 Q. And just to make sure the jury understands, the purpose of  
10 this expert report was to articulate your opinions about, among  
11 other things, how the Rightscorp system works; is that correct?

12 A. That is correct. That is one of the things that's covered  
13 in the report.

14 MR. BROPHY: Your Honor, may I have permission to  
15 publish a copy of this report to the jury?

16 THE COURT: Yes.

17 BY MR. BROPHY:

18 Q. Ms. Frederiksen, I'd like to direct your attention to  
19 paragraph 57 of your report, which is on page 23. Please let  
20 me know when you're there.

21 A. I'm there.

22 Q. Okay. In that paragraph of your report you state -- and  
23 actually, I'm going to skip up one line to the last sentence of  
24 the preceding paragraph. And you say, "*After Infringement*  
25 *Finder receives the bit field, it creates an evidentiary*



1    *infringement record.*" Do you see that?

2    A. I do.

3    Q. Then you go on in paragraph 57 to say, "*The infringement*  
4    *record includes information such as the torrent hash, the*  
5    *tracker ID, the IP address and port the peer was using, the*  
6    *date and time the peer offered the work,*" and then you say, "A  
7    *copy of the bit field values that show which portions of the*  
8    *file the peer was offering.*"

9       Do you see that?

10   A. Yes.

11   Q. You go on. And in the last sentence says, "*This record is*  
12   *stored in Rightscorp's torrent infractions table.*"

13       Do you see that?

14   A. I see that, yes.

15   Q. In your opening report, you state that, "*The bit field*  
16   *values that show which portions of the file the peer was*  
17   *offering are stored in Rightscorp's database.*" Right?

18   A. Yes.

19   Q. And --

20   A. In a temporary table, just to be clear, so it's not  
21   confusing to the jury. But, yes, they are initially stored.

22   Q. Where does it say in this expert report that that's a  
23   temporary table?

24   A. I would have to read down and see if I say what happens to  
25   that table.

1 Q. Please take a moment to review it.

2 A. Okay.

3 (Pause.)

4 I see that in the part where I'm discussing the notice  
5 generation, I refer to the other table that's derived from this  
6 one, but I don't see where I say specifically what happens to  
7 that bit field data.

8 Q. So you don't have anywhere in this report where you  
9 indicate that the bit field data is deleted; is that correct?

10 A. Not unless it's in the exhibit where I described the code.

11 Q. I want to make sure we're clear about this. You have your  
12 entire report in front of you. Is there anywhere in there  
13 where it says that the bit field values in that torrent  
14 infractions table are deleted?

15 MR. O'BEIRNE: Your Honor, I'm sorry. I would object  
16 at this point as misleading. As counsel knows, Ms. Frederiksen  
17 also has a rebuttal report and a supplemental report.

18 MR. BROPHY: Your Honor, I'm getting there.

19 MR. O'BEIRNE: But the reports are not the summary of  
20 her full opinions that she's prepared to express, as Your Honor  
21 knows. The sequencing report is not --

22 THE COURT: I think the jury is well aware that --  
23 because we've discussed it here in open court in front of the  
24 jury and other questions have been asked, that she does have a  
25 rebuttal report and a supplemental report. So you'll be able

1 to get into those on redirect. The objection is overruled.

2 BY MR. BROPHY:

3 Q. There is nowhere in this report where you say the bit field  
4 values are deleted; is that correct?

5 A. I haven't read the entire report as I sit here on the  
6 stand, but I have looked in the two parts where I would expect  
7 to have mentioned that, if I covered it in this report, and I  
8 do not see it in these few sections.

9 Q. So the only language that you can find in your report  
10 indicates the record is stored, right?

11 A. Yeah. Give me a moment just to review the code  
12 descriptions to see if I cover it in that exhibit, if you  
13 would, because that goes into a little bit more detail.

14 (Pause.)

15 No, I don't see here that I specifically say what happens  
16 to that bit field --

17 Q. Okay. So --

18 A. -- in this report.

19 Q. Thank you. So report number one, the only information you  
20 provide is that the bit field data is stored in these torrent  
21 infraction tables; is that right?

22 A. Correct.

23 Q. Now, do you recall that I deposed you after you issued this  
24 report. We discussed that lovely time we spent together?

25 A. Yes. We had. You deposed me a couple times, so at least

1 one of them was after this report.

2 Q. So I deposed you two times. I'm referring to the time you  
3 were deposed in October 2018.

4 A. The first time.

5 Q. The first time, yes, ma'am. Do you recall giving  
6 testimony -- let me ask this a different way.

7 Did you testify that the Rightscorp system stores bit field  
8 data during that deposition?

9 A. That was four, five years ago. I recall that we discussed  
10 it. I don't recall specifically the exact questions I was  
11 asked or answers I gave.

12 Q. Let me do this a different way. Does Rightscorp's system  
13 store bit field data -- I'm sorry. I don't mean to interrupt.  
14 I just want to make sure the question is clear.

15 Does Rightscorp's system store bit field data as it's  
16 received from the Grande customer's computer?

17 A. It stores the bit field data -- it receives the bit field  
18 data as ones and zeros. It translates that into a condensed  
19 format called hexadecimal, which just allows you to use shorter  
20 space to represent those values. That is stored in a temporary  
21 table until it's processed to identify whether the peer was  
22 reporting that it had the full bit field. And then a flag is  
23 set in yet another table that feeds down the e-mail process  
24 later. That temporary table where the bit field is stored is  
25 not retained permanently in the system, so the data is

1 collected, it's manipulated, checked, but ultimately that table  
2 is cleared out periodically.

3 Q. So my question was, does the Rightscorp system actually  
4 store the bit field data? Sounds like your answer is no; is  
5 that right?

6 A. Well, I guess I'm being careful to answer "stored," because  
7 it stores it for a short period of time, but it does not store  
8 it forever.

9 Q. Let's say we wanted to know whether the Rightscorp system  
10 had bit field data for a notice sent in 2018. Would it have  
11 that data?

12 A. Only via the interrogation of the full field -- the full --  
13 full load flag. You would not be able to go back and look at  
14 the original bit field data that was reported, in all  
15 likelihood, unless there was a backup or something.

16 Q. So your testimony is all we have is a flag that either says  
17 one or zero, right? We don't have the bit field that shows how  
18 much of the payload was actually on that individual computer,  
19 right?

20 A. Except for very recent detections, I would believe that to  
21 be true, yes.

22 Q. So my hypothetical is back in 2018. So your testimony is  
23 that a notice from 2018, we can't go back and look at that  
24 data; is that right?

25 A. As far as I am aware, that is correct, yes.

1 Q. What about 2016, same answer?

2 A. Yes.

3 Q. 2014, same answer?

4 A. Yes.

5 Q. 2012, same answer?

6 A. As far as I am aware, that is correct.

7 MR. BROPHY: I'd like to direct the Court's attention  
8 to page 207 of your deposition, lines 24 through 208, line 17.

9 BY MR. BROPHY:

10 Q. So that's 207, line 24 to 208, line 17.

11 Please let me know when you're there.

12 A. I'm there.

13 MR. BROPHY: Counsel, you there?

14 BY MR. BROPHY:

15 Q. I asked the question, *"Do you know if Rightscorp records*  
16 *the bit field information transmitted from a subscriber when it*  
17 *performs that handshake?"*

18 And you answered, *"Some of the records I have seen from*  
19 *their database contain bit field information, but I'm trying to*  
20 *think if I have ever seen any that recorded partial bit fields*  
21 *or it was only the full ones that get recorded. I think if the*  
22 *client comes back and says it only has a partial handshake, it*  
23 *only has a partial bit field in the current code, I think it*  
24 *just moves on to another client. I don't think it makes a*  
25 *record of that partial handshake."*

1       And then you say, *"In the older code, there was a process*  
2 *where it would return the bit field and record that bit field,*  
3 *even where it wasn't full. I want to double-check the code, I*  
4 *think in the current code, it only records those clients that*  
5 *come back and say I've got it all."*

6       Do you see that?

7       A. Yes.

8       Q. So in 2018, you testified that in the older code, there was  
9 a process where it would return the bit field and record that  
10 bit field even when it wasn't full. Do you see that?

11      A. Yes.

12      Q. Is that correct?

13      A. I believe it to be, yes, based on my recollection of the  
14 code.

15      Q. So your understanding is that the Rightscorp system does  
16 record bit field data?

17      A. Well, again, without dragging you through too much of a  
18 database tutorial here, databases are comprised of -- can be  
19 comprised of multiple tables. At the time the detection  
20 occurs, there is an insert into the torrent infractions table  
21 that includes the bit map data. At a later point in time, as  
22 that table is being processed in preparation for notices,  
23 certain information is extracted out of that table once the  
24 eligibility or some of the eligibility for notices is  
25 determined and populated in another table that subsequently

1 used to make notices.

2 So that later table, which at some point feeds into the  
3 table that's done the original observation of the peer, gets  
4 marked, for instance, with whether a notice has been sent. And  
5 so the ultimate record table does not retain the bit field, but  
6 during the processing of the program, information is placed in  
7 a table that's processed in subsequent passes until it gets to  
8 the point where it says, okay, this guy's got the full payload.  
9 Yes, we'll put him in this table. And otherwise, he doesn't go  
10 in the table that's for notices. Does that make sense at all?

11 Q. Not -- frankly, no, but I think I'll just try to clarify  
12 this here. You served an expert report that says, this record  
13 is stored in a table on Rightscorp system, right?

14 A. Yes.

15 Q. It's in the expert report. And then in your deposition you  
16 stated, *"In the older code, there was a process where it would*  
17 *return the bit field and record that bit field even when it*  
18 *wasn't full."* Right?

19 A. That is my recollection is that it stores the entire bit  
20 field. I stand by that testimony.

21 Q. Even if it's not full?

22 A. That is my recollection as I sit here, and it's what I  
23 testified to four years ago, so I'm -- I would double-check in  
24 the code, but that is my recollection that once that handshake  
25 occurs and the bit field is obtained, the hash amount that



1 contains the bit field is stored in that infractions database.

2 Q. So then we can go back to 2014 and pull the bit fields for  
3 a particular notice. Is that what you're saying?

4 A. No. I'm saying -- I'm not saying that that table is  
5 retained forever. I'm saying that in the processing of the  
6 code, when the initial detection is made, the bit field is  
7 collected and stored. And until that bit field has  
8 subsequently been acted upon and that table flushed out, it's  
9 in that table.

10 Q. How long is it in that table for?

11 A. I do not recall how long they retained that table. I don't  
12 have specific knowledge of that. It's retained -- it's  
13 retained until it's processed by the next step in the process,  
14 but I don't recall if it's flushed immediately or if it's  
15 flushed on some periodic basis. There is a piece of SQL code  
16 that goes through and cleans that table out. But I don't, as I  
17 sit here, recall whether that's run with each pass of the  
18 notice generation or if it's run on some other schedule.

19 Q. So your testimony is that when you use the word "stored" or  
20 "recorded," that means it's not saved, is that your testimony?

21 A. No. My testimony is that it's stored until it is  
22 subsequently -- until that table is subsequently purged when  
23 it's no longer needed for the processing. So I am not saying  
24 it is stored forever or saved forever or kept forever. What I  
25 am saying is that a record is made in a database table until

1 such time as that database table has been processed by another  
2 step in the process, and then that database table is  
3 periodically cleaned out. And I don't think that it's  
4 instantaneous. I think that it's over a period of days -- day  
5 or days.

6 Q. Do you recall -- let me back up.

7 Have you seen bit fields actually collected from Grande  
8 customer computers within the Rightscorp database?

9 A. My recollection is in that earlier case that we have  
10 mentioned, that at one point in time --

11 Q. Sorry. Just to make sure it's clear, I don't mean to  
12 interrupt you, but I don't want to talk about the earlier case.

13 I'm talking about this case and the Grande customers and  
14 whether you have seen bit fields collected from Grande  
15 customers that were stored in the Rightscorp database?

16 A. I don't recall specifically as I sit here. I know that in  
17 the earlier case I did an inspection of the live database on a  
18 Webex session and saw some of that data, just to see what it  
19 was stored as. I do not recall whether I did that in this  
20 case, so as I sit here, I can't say that I recall that I have.

21 Q. Okay. So if I were to ask you, yes or no, have you seen  
22 bit field data actually collected from a Grande customer, what  
23 would your answer be?

24 A. My answer would be that my recollection on that is unclear  
25 as I sit here today and that I don't have a clear recollection

1 of having seen such.

2 Q. Let me direct you, then, to page 210 of your deposition  
3 from October of 2018, line 24 on 210 to line 14 on 211. Please  
4 take a look at that and let me know if that refreshes your  
5 recollection.

6 A. Okay.

7 Q. Do you recall now giving testimony that you did see bit  
8 fields from Grande's customers in the Rightscorp database?

9 A. What I say is, I think in reviewing the database, it's  
10 likely I would have seen that specific database that's  
11 populated from infractions, certainly with respect to older  
12 records. And that I would want to double-check that in the  
13 newer ones to see if they're also producing that.

14 Q. So certainly with respect to the older records you had seen  
15 Grande customer bit field data, right?

16 A. Yeah, that suggesting to me that I did see that Webex, that  
17 we repeated that Webex exercise in this case.

18 Q. So the Rightscorp system does record bit field data, right?

19 A. Again, it's recorded in the table until such time as it's  
20 subsequently processed and then that table is flushed out  
21 periodically, as new records come in, table fills up, the table  
22 is flushed out and new records start populating it.

23 Q. Where did you say that in this answer we're looking at  
24 here?

25 A. I don't say that in this specific answer. You didn't ask a

1 question about it.

2 Q. So here you say you saw the data, right?

3 A. I say it's likely that I saw it, yes.

4 Q. And previously the answer we looked at on page 208, you  
5 say, it records the bit field, right?

6 A. It does record the bit field. I told you in the code.

7 Q. But where in this answer on page 208 do you say that the  
8 bit field is deleted?

9 (Pause.)

10 A. I don't think you asked me what happens to the bit field,  
11 counsel. I don't see that following question here. I think  
12 you were just asking me had I ever seen it, and I said, yeah, I  
13 believe that I had.

14 Q. Your testimony -- I asked, *"Do you know if Rightscorp*  
15 *records the bit field information?"* And you said, *"It records*  
16 *the bit field information."* Right?

17 A. It does. It records the bit field information in a  
18 temporary table until such time as that table is processed and  
19 then subsequently clears that table out after it's gotten the  
20 information it needs from the table.

21 Q. You didn't say that second part, right? You just said it  
22 was recorded, in this deposition, right?

23 A. To me, that's recorded, counsel. I'm sorry. I live in a  
24 very precise world of computer code. And if something is  
25 stored in a database, it's recorded. If that database is later

1 cleared out, then it's cleared out. But it's recorded at the  
2 time that it's collected until the next step of the analysis  
3 process happens.

4 Q. So your testimony, then, is that the bit field data is  
5 saved momentarily, 15 minutes or whatever that time period is,  
6 but ultimately it's trashed, is that right?

7 MR. O'BEIRNE: Objection, Your Honor. Misstates the  
8 testimony.

9 THE COURT: Yes. Restate your objection.

10 MR. O'BEIRNE: Your Honor, misstates the testimony as  
11 to length of time and the terms --

12 MR. BROPHY: I'll rephrase my question, Your Honor.

13 THE COURT: Yes.

14 BY MR. BROPHY:

15 Q. Your testimony is that Rightscorp saves the bit field data  
16 for a very small period of time and then throws it in the  
17 garbage; is that right?

18 MR. O'BEIRNE: Same objection as to "throws in the  
19 garbage," Judge.

20 THE COURT: Well, overruled.

21 A. My testimony is that the data is recorded. It is retained  
22 in the table until such time as it's processed. Processing  
23 data from the infringement detection table in order to prepare  
24 a notice can happen up to days after the time that notice is  
25 sent, and so it would be retained until it is processed and

1 until such time as that table is flushed.

2 And I've already told you I don't know the specific  
3 frequency that that table was refreshed, so your  
4 characterization that this happens in moments or hours, I would  
5 disagree with, but I cannot provide you a date certain that  
6 something would be gone 30 days later or three days later or --  
7 but I know that those notices can be sent -- there's testing in  
8 the code to see if that notice was within a certain window of  
9 time of freshness, if you will, and I know that the data is  
10 there up until the point in time that the process right ahead  
11 of that processes the data from the torrent infractions table  
12 to create the secondary and tertiary tables that are used to  
13 actually feed the notice generation process.

14 BY MR. BROPHY:

15 Q. Would you agree with me that you have not looked in the  
16 Rightscorp database yourself to determine whether the bit field  
17 data persists there or not?

18 A. I would agree with you that I haven't performed any  
19 extensive analysis on that particular table to be able to see  
20 how far back the bit field data persists. I have seen code in  
21 the production that is the code that refreshes that table.

22 So with the understanding that that code is run  
23 periodically, it would be my understanding that that bit field  
24 data doesn't persist clear back into the beginning of  
25 Rightscorp's notice generation history.

1 Q. You have not independently searched the Rightscorp system  
2 for any trace of bit field information to determine whether it  
3 exists or not; is that correct?

4 A. I have not been asked to perform such a search of  
5 Rightscorp's system and I have not independently gained access  
6 to their system and run searches against their database. I've  
7 seen demonstrations of the database and what was in it, but I  
8 have not performed a real analysis in real time against those  
9 databases.

10 Q. Who told you that the bit field data is gone?

11 A. Well, first of all, the code told me it's gone because I  
12 see the programs that are used to refresh that table or to --  
13 it's called "dropping" the table, and then a table is recreated  
14 as a fresh and empty table. I believe that -- my understanding  
15 that that happens on a periodic basis as the table fills up was  
16 gained from Mr. Boswell's deposition testimony, if I recall  
17 correctly.

18 Q. So if I understand your testimony correctly, you have not  
19 investigated the database yourself and you're relying on  
20 Mr. Boswell's say-so that those bit field materials are no  
21 longer in existence; is that right?

22 A. Mr. Boswell's say-so and my understanding of the source  
23 code that I have reviewed in the context of this litigation.

24 Q. I think you referenced a moment ago some source code that  
25 drops the torrent infractions table; is that right?

1 A. That's correct.

2 Q. And your position is that that source code deletes the bit  
3 field data; is that right?

4 A. Well, when a table is dropped, all of the data that is  
5 contained within the table is effectively gone at that point in  
6 time and it's a normal step when you refresh a new table that  
7 you drop the old table and then you do what's called a "create"  
8 to create the new table, and that creates a new empty instance  
9 of that table.

10 Q. Is the name of the file that drops the torrent infraction  
11 table a file named Rightscorp\_torrentinfractions.sql?

12 A. It may be. I don't have a specific memory of the name of  
13 the table. I could locate it very quickly searching the code  
14 for drop and the table name, but as I sit here, I don't recall  
15 the specific name of the function. I mean, I know I've seen it  
16 and I've seen the code, but I don't recall what it was called.

17 Q. Do you recall us discussing this in your second deposition?

18 A. No, but I'm sure you'll refresh my memory.

19 Q. I'll do my best.

20 MR. BROPHY: May I approach again, Your Honor?

21 THE COURT: Yes.

22 MR. BROPHY: Thank you, sir.

23 THE WITNESS: Thank you, counsel.

24 BY MR. BROPHY:

25 Q. Okay. I'd like to -- let's back up a little bit. So what



1 I've handed you is a transcript of a deposition dated  
2 December 15, 2021. Do you recall giving deposition testimony  
3 at that time period?

4 A. You have handed me copy of my October 18, 2018 deposition,  
5 counsel. That's the same one we were looking at a moment ago.

6 Q. My paper shuffling has failed me here. Give me one moment,  
7 please.

8 MR. BROPHY: Your Honor, now would be a good time to  
9 take our afternoon break and I can get my act together.

10 THE COURT: Okay. Well, I wasn't planning on taking  
11 it quite yet, but, okay, I want to let you get your act  
12 together.

13 MR. BROPHY: Thank you, Your Honor. I appreciate it.

14 COURT SECURITY OFFICER: All rise for the jury.

15 *(2:38 p.m., the jury exits the courtroom.)*

16 \* \* \*

17 *(3:07 p.m.)*

18 COURT SECURITY OFFICER: Please rise for the jury.

19 \* \* \*

20 COURT SECURITY OFFICER: All rise.

21 THE COURT: Please be seated.

22 Before we get started, counsel, have any of you had  
23 difficulty with the attorney WiFi? Had any problems? Any of  
24 you? Yes. Well, join the club. I don't know what they did  
25 with the attorney WiFi here, but I couldn't get the attorney

1 WiFi. And I needed to communicate back and forth. I ended up  
2 having to reset my iPad's WiFi in order to get it to work at  
3 all in there. And I just wondered. We're going to contact IT  
4 and see what's going on, because that's crazy. I don't know if  
5 any of you use the WiFi in the courthouse during the lunch  
6 breaks or anything to check your e-mail. Have you had trouble  
7 with it? You did. Something is going on here. I don't know  
8 what it is. It's very strange.

9 The Court would note the presence of the ladies and  
10 gentlemen of the jury as well as counsel and the parties.

11 Let's move forward.

12 MR. BROPHY: Thank you, Your Honor, and I appreciate  
13 the accommodation earlier.

14 BY MR. BROPHY:

15 Q. Ms. Frederiksen, I have now handed you what is the correct  
16 transcript of a deposition that you gave in December. Do you  
17 recall giving a second deposition, December 15, 2021?

18 A. I remember it was around the end of the year, so yeah.

19 Q. It was cold. I believe before we left off, we were talking  
20 about the fact that you had identified some function within the  
21 Rightscorp system that you perceived did this -- I believe you  
22 said the drop?

23 A. Drop and recreate the table, yes.

24 Q. Drop the table. I direct your attention -- and just to  
25 reorient you, I was asking whether you knew the name of the SQL

1 file that housed that function and I believe your testimony was  
2 you didn't remember. Is that --

3 A. Yeah. I didn't remember as I sit here.

4 Q. I'd like to direct your attention, then, to your  
5 December 15, 2021 deposition on page 200, lines three through  
6 nine, if you would, please. And please let me know if that  
7 refreshes your recollection as to the name of the dot-SQL file?

8 A. Yes, during the deposition you allowed me to search for  
9 the -- search the code for the file, and I found it, and I have  
10 it here.

11 Q. And the name of that file is Rightscorp\_routines.sql; is  
12 that correct?

13 A. It's actually -- I mention here  
14 Rightscorp\_torrentinfractions.sql and Rightscorp\_routines.sql.

15 Q. So it's in both of those?

16 A. The file that drops and redefines the table is  
17 Rightscorp\_torrentinfractions.sql, and that's all one word,  
18 lower case.

19 Q. Okay. Thank you. And do you happen to recall the name of  
20 the function within that file that performs the quote/unquote  
21 drop, as you say?

22 A. My recollection is we sought it out in the deposition, but  
23 I don't recall it as we sit here.

24 Q. If I could direct your attention to page 201 of that same  
25 deposition, line five. Please let me know if that refreshes

1 your recollection.

2 A. Let's see, this is a comment about invoking a scheduled  
3 function that invokes Rightscorp\_TorrentCleave, where  
4 TorrentCleave is a one word, with a capital T and C.

5 Q. And to your memory, is that the name of the function that  
6 performs the drop that you've identified?

7 A. My recollection is that the drop is actually in this parent  
8 function, but the TorrentCleave does some splitting of the  
9 table, but I would want to look at the code to refresh my  
10 recollection on that.

11 Q. Would you agree with me that whatever function is that you  
12 identified that dropped the table, when you looked at it more  
13 carefully, you determined that function actually backs up the  
14 bit field data rather than deleting it?

15 A. No, that's not my recollection at all, counsel. My  
16 recollection is that during my deposition we discussed two  
17 discrete functions. One of which is the drop and recreate the  
18 table, which effectively clears the table, but that that same  
19 routine included this invocation of the TorrentCleave routine  
20 which did a backup.

21 So you can kind of think of it from top to bottom, if you  
22 went out and looked at everything that was being done, that  
23 there was a splitting of the table with some date associated to  
24 a temporary -- to a different table that had the date affixed  
25 to it. And then subsequent to that, the original table was

1 dropped and recreated.

2       So the table we've been talking about, the torrent  
3 infractions table, that was dropped and recreated, just  
4 scrubbed clean, but there was some action before that that we  
5 discussed in my depo that I think was related to the cleave  
6 function you're talking about, where there was some form of  
7 backup done. And my recollection is that it appended, like,  
8 the date. And as I sit here, I don't recall if it was the date  
9 of the action or the date for a specific range of data it was  
10 cleaving out, but that could easily be determined from the  
11 code.

12 Q. Thank you for that. I'd like to break that down a little  
13 bit, because that was complex. Just to orient us, we have an  
14 expert report in which you've stated that the record, including  
15 the bit field data, is stored in Rightscorp's torrent  
16 infractions tables; is that right?

17 A. Correct.

18 Q. And during your second deposition, you identified some code  
19 that you believed deleted that torrent infraction table; is  
20 that right?

21 A. That's correct, yes.

22 Q. And through the process of that deposition, you came to  
23 understand that before that table is dropped, the table is  
24 backed up, a copy of it is made; is that right?

25 A. We discussed during the deposition that that cleave

1 function creates a copy with a different name. It's a  
2 different copy. But, yes, a copy is made of torrent  
3 infractions before the table is deleted.

4 Q. So if I can -- if I understand this correctly, what you're  
5 saying is there is a torrent infractions table that has bit  
6 field data in it and the Rightscorp system makes a copy of it  
7 and puts a date along with the file name, so January 15, 2022,  
8 torrent infractions. And then it deletes and blanks out the  
9 original torrent infraction table; is that right?

10 A. As best I recall that code, that's correct, yes.

11 Q. And based on your understanding of how that code operates,  
12 every day, there's a new torrent infraction created. It's  
13 populated with bit field data, then the Rightscorp system makes  
14 a copy of it -- there's another one -- and deletes the  
15 original, but now we have two copies for the two days, and it  
16 would continue to do that every day, making a new copy, a new  
17 backup of that torrent infractions table; is that right?

18 A. With the proviso that I don't recall that we ever made a  
19 determination of those cleaved tables, if they were a temporary  
20 copy, just until some point in processing or if they were  
21 retained permanently.

22 Q. And that's really what I'm getting at, is you haven't seen  
23 whether those things are retained permanently or not directly,  
24 have you?

25 A. I have no direct knowledge of that, sir.

1 Q. So all you know is that Mr. Boswell says that data doesn't  
2 exist; is that right?

3 A. I know that Mr. Boswell says he searched for bit field data  
4 and was unable to locate any. I don't know if anyone else was  
5 involved in that search.

6 Q. But Mr. Boswell told you that bit field data doesn't exist;  
7 is that right?

8 A. I think he told counsel, and I asked counsel about it, and  
9 counsel said that's what he said. But I think that he may have  
10 written a declaration about that as well, as best I recall.  
11 But he stated that in a declaration.

12 Q. So one way or another, you were relying on Mr. Boswell's  
13 representation that that bit field data no longer exists; is  
14 that right?

15 A. I was relying on the representation of the producing party  
16 that the data doesn't exist, that's correct.

17 Q. And the code that we've seen makes a copy of it, right?

18 A. That is correct. In the code there is a copy operation  
19 with a date stamp appended to the file name that's being  
20 created and it gets renamed to a temporary table, then copied  
21 out, and some other things happen, as best I recall.

22 Q. So we have Mr. Boswell saying the bit field data doesn't  
23 exist and we have source code indicating that it makes a daily  
24 backup. Is that fair to say?

25 A. I wouldn't characterize it that way specifically, just

1 because I don't have knowledge of the intent or purpose of that  
2 cleave operation, if that is a short-term backup or a daily  
3 backup that's intended for longer retention or, you know,  
4 exactly what happens to that downstream. I know that when we  
5 were searching for that code during my deposition, you know, I  
6 went back and reviewed what we had seen when I was searching  
7 that in the deposition. I don't recall that we ever got the  
8 ultimate answer of why it was being created, how long it was  
9 being retained, or how it was destroyed.

10 Q. So we have Mr. Boswell saying there is no bit field data,  
11 and the source code that you've seen indicates it makes a daily  
12 back up, right?

13 MR. O'BEIRNE: Objection, Your Honor, asked and  
14 answered.

15 MR. BROPHY: Your Honor, I'm getting a very long  
16 answer. I'm trying to discretize the issue a bit.

17 THE COURT: The objection is overruled.

18 THE WITNESS: Just to be clear, what we see is a job  
19 that at least in 2016 was scheduled to run on a daily basis to  
20 clear this table out. A part of its operation created a  
21 backup. To me, a daily backup is typically a backup that's  
22 kept until some point, like a weekly backup or a monthly backup  
23 when it's rolled up. I mean, that's my storage administration  
24 background.

25 So with the proviso that it appears that this job runs



1 daily and that as a part of its operation it keeps a backup, I  
2 agree with you. Beyond that, I do not know anything about the  
3 intended purpose of that backup or what happens to it later.

4 BY MR. BROPHY:

5 Q. If the bit field data existed on Rightscorp's database, we  
6 can go back and look at notices from 2015 and determine whether  
7 the computers accused of sharing music actually have the song  
8 files based on the bit field data, right?

9 A. We would be able to determine what that peer had recorded  
10 with respect to its bit field, if the bit field data was still  
11 in existence, yes.

12 Q. So if we had the backups, we could check to see if the  
13 notices are accurate or not, fair to say?

14 A. That's a reasonable premise, I think. If they existed and  
15 if they have the data that -- I mean, if nothing had changed,  
16 then yes.

17 Q. And Mr. Boswell says they don't exist, those backups,  
18 right?

19 A. That is my understanding that Rightscorp has represented  
20 that that data no longer exists and Mr. Boswell has said that,  
21 and perhaps others for all I know.

22 Q. And you haven't pointed to any code that identifies -- let  
23 me say that differently.

24 You have not pointed to any code in your expert reports  
25 that permanently deletes that bit field data; isn't that right?

1 A. I believe that to be true.

2 Q. We're going to switch gears. I want to talk about payloads  
3 and bit fields. What I'd like to do is start out with a couple  
4 simple questions, soft balls, hopefully.

5 I think earlier today we talked about a payload. Do you  
6 remember that?

7 A. Yes.

8 Q. Would you mind articulating for the jury again your view of  
9 what a payload is, please?

10 A. A payload would be a file or a set of files that is  
11 represented by a particular dot-torrent file such that peers  
12 that wanted that file or files could use the dot-torrent file  
13 to locate other peers that had the same. So it could be a  
14 single file. It could be an album. It could be a collection  
15 of albums, but it's a file or files that are grouped together  
16 and described by a single dot-torrent file.

17 Q. Thank you.

18 MR. BROPHY: Your Honor, with your permission, I'd  
19 like to publish a demonstrative to the jury. I'm happy to show  
20 it to counsel.

21 MR. O'BEIRNE: I haven't seen it, Judge.

22 THE COURT: You haven't seen it? You have to show  
23 him. What is it?

24 MR. O'BEIRNE: I see it.

25 MR. BROPHY: May I proceed, Your Honor?

1 THE COURT: You may.

2 BY MR. BROPHY:

3 Q. Okay. So Ms. Frederiksen, what I'd like to do is assume  
4 for a moment that we have a payload with ten songs in it. Do  
5 you understand what I mean by that?

6 A. Sure.

7 Q. So we've got a single payload, and it's got songs one  
8 through ten, just like shown on the screen. Do you see that?

9 A. Yes.

10 Q. Let's see. Do you understand that BitTorrent software will  
11 allow you to pick which files from a payload you want to  
12 download?

13 A. Some of the more sophisticated clients that are running  
14 today would allow you to do that. That has not always been the  
15 case, but over time, especially as payloads included multiple  
16 movies and you might want to do previews and things, some of  
17 the more sophisticated clients certainly can allow you to do  
18 that.

19 Q. Would you agree with me that at least as far back as 2015,  
20 there were BitTorrent solutions that would allow you to do  
21 that?

22 A. I don't remember specifically when that technology was  
23 introduced, counsel, so I would want to do some research before  
24 I agreed or disagreed with you.

25 Q. Before we go there, I should have asked something else. I

1 believe you referenced uTorrent earlier in your testimony. Do  
2 you recall that?

3 A. Yes.

4 Q. And that's a software that you've used yourself; is that  
5 correct?

6 A. I have used uTorrent, yes, in my testing.

7 Q. And you used it for the testing in this case; is that  
8 right?

9 A. My recollection is that that was the client I used in  
10 testing for this case.

11 Q. Do you understand that uTorrent allows you to do this  
12 selective file -- selective downloading of files from payload?

13 A. I know that the current version that's available for  
14 download in 2022 allows you to do that. Again, I don't recall  
15 specifically when that capability was added.

16 Q. Do you recall giving testimony at a trial in a prior case  
17 involving Rightscorp, December 3rd of 2015?

18 A. I recall that I gave testimony in that case, but if you're  
19 asking me do I remember exactly what testimony I gave, some of  
20 it I will, some of it, I won't.

21 Q. I'll give you a cheat sheet in just a moment.

22 MR. BROPHY: May I approach, Your Honor?

23 THE COURT: Yes.

24 THE WITNESS: Thank you, counsel.

25 BY MR. BROPHY:

1 Q. So I believe my question was -- I'll just rephrase it since  
2 I won't ever get it right if I try to say it again.

3 Will you agree with me that in 2015 there were BitTorrent  
4 software clients that would allow you to selectively pluck  
5 files out of a payload and download them?

6 A. Again, as I stated, counsel, I do not remember specifically  
7 when that feature was added. I know it's been around for at  
8 least a couple years, but I just don't recall as I sit here  
9 when it was added. I would want to check that from the  
10 repositories of the source code for the clients or if there's  
11 something you can show me that would help me recall whether I  
12 knew that in 2015.

13 Q. Yes, ma'am. So I handed you a copy of a deposition  
14 transcript. I believe you've already testified you recall  
15 giving -- pardon me, a trial transcript. I believe you recall  
16 testifying roughly in this timeframe, in 2015; is that right?

17 A. Yeah, in the BMG/Cox matter, yes.

18 Q. I direct your attention to page 437 of that trial  
19 transcript beginning on line 15 and extending through the top  
20 of the next page. Would you mind, please, reviewing that and  
21 let me know if it refreshes your recollection?

22 (Pause.)

23 A. Okay.

24 Q. Does that refresh your memory as to whether BitTorrent  
25 clients existed in 2015 that allows you to selectively download

1 files from a payload?

2 A. Yes, during our discussion in 2015, I observed that some of  
3 the more sophisticated BitTorrent clients did provide that  
4 capability, so that does refresh my recollection that it must  
5 have existed, at least that early. And I also observed that  
6 some of them don't.

7 Q. Right. So going back at least seven years, there were  
8 BitTorrent solutions that allowed a user to selectively  
9 download files from a payload, correct?

10 A. A specific file from a payload or a set of files from a  
11 payload, yes.

12 Q. Thank you. So looking at our demonstrative up here, it's  
13 possible for a user to decide to just grab those two song files  
14 that have moved over underneath that computer, songs five and  
15 eight; is that right?

16 A. Okay.

17 Q. Do you agree with that?

18 A. Again, depending on which client you were using, but if the  
19 user knew how and the client was capable, then they could do  
20 so.

21 Q. So it's possible for the user to say, I want to download  
22 just songs five and eight, and I'm going to pull those to my  
23 computer, and I don't want any of the others, right?

24 A. Correct.

25 Q. In that instance, the user's computer would only have those

1 two songs from the payload, right? The rest would be empty?

2 A. If their client was functioning properly, that would be my  
3 presumption, yes.

4 Q. You were in the courtroom during Mr. Boswell's testimony  
5 last week; is that correct?

6 A. I believe I was here for all of it, yeah.

7 Q. And do you recall Mr. Boswell testifying about something  
8 called a 10 percent bit field rule?

9 A. Yes.

10 Q. What's your understanding of the 10 percent bit field rule?

11 A. That the 10 percent bit field rule was a change that was  
12 made to the data rather than the software, if you will, during  
13 a period of time when BitTorrent peers were underreporting in  
14 the handshake how many pieces they actually had in order to try  
15 to evade detection by antipiracy. So maybe they had the whole  
16 thing, but they would report 80 or 90 percent. And then they  
17 would send a flurry of half pieces, so that peers that were  
18 communicating with them actually knew they had everything, but  
19 they didn't know it from the bit field.

20 And the 10 percent change that we're talking about is  
21 Rightscorp went through and checked the bit field data that it  
22 had not yet disposed of from the torrent infraction tables we  
23 were talking about. And if the total length of the bit field  
24 was greater than 30, then it would apply a change that would  
25 say, if you have at least 10 percent of the bit field, I'll

1 change that flag that I mentioned was used in the downstream  
2 processing for notice generation, that I would flip it to the  
3 value that would cause a notice to be generated.

4 Q. So if I understand your testimony correctly, the 10 percent  
5 bit field rule caused the Rightscorp system to look at a bit  
6 field and as long as 10 percent of the payload existed on that  
7 computer, it would consider the computer as having all the  
8 payload, right?

9 A. With respect to eligibility for notice and with the proviso  
10 I think there was a second check that made sure that the bit  
11 field was some minimum length. I believe that was 30, so if  
12 it's at least 30 long and you've got 10 percent, then you're  
13 notice-eligible for that payload.

14 Q. Then you're in business. Okay. So let's assume for a  
15 moment that all these songs are roughly the same size and based  
16 on that math, we have two songs out of a ten-song payload,  
17 meaning we've got 20 percent of the bit fields full; would you  
18 agree with that?

19 A. I'm with you so far.

20 Q. So under the Rightscorp 10 percent bit field rule, it's  
21 going to consider that computer as having the entire payload,  
22 isn't it?

23 A. It would consider that computer to be eligible for that  
24 payload for a notice.

25 Q. And so it's going to generate notices for those songs,



1 isn't it?

2 A. Assuming that they were songs that were being protected,  
3 yes.

4 Q. And I should have said that. I'm assuming every single one  
5 of these songs is a song that Rightscorp monitors for. So  
6 assuming that, Rightscorp is going to generate e-mails for  
7 those two songs, isn't it?

8 A. During that -- yes, during that time period.

9 Q. And it's also going to generate e-mails for all the other  
10 songs that aren't in the payload, isn't it?

11 A. During -- assuming that all were protected songs, during  
12 the 10 percent bit field timeframe, it would generate --  
13 potentially generate notices for those other songs.

14 Now, from the 2015 time period on where it switched to  
15 checking for actual only the bit fields of a specific protected  
16 work, then it would not have generated for any of those others.

17 Q. We're going to get to that.

18 A. Yeah. Let's just be clear on the time period so we don't  
19 leave a confusing record.

20 Q. So your testimony is that even though that computer only  
21 has two songs, Rightscorp is going to send out ten notices,  
22 isn't it, under the 10 percent bit field rule?

23 A. I would want to investigate and confirm that, but my  
24 assumption as I sit here is that that is a possible  
25 hypothetical.

1 Q. So the computer doesn't have song one, and Rightscorp is  
2 sending a notice anyway, isn't it?

3 A. Again, as I sit here, that would be my speculation that  
4 that would be the likely behavior, but I would want to confirm  
5 and see if there was anything that checked or balanced that in  
6 the code.

7 Q. Well, that's what the 10 percent bit field did to the  
8 program, right? It went through and found instances where only  
9 10 percent of the bit field was full, and here we have 20, and  
10 then it would just change everything to full, right? That's  
11 what it did?

12 A. The full files was at the total payload level, so it would  
13 essentially check the box that this payload is eligible for a  
14 notice. And in the hypothetical you present here, as I said, I  
15 think that that might be correct, but before I affirmed that it  
16 was correct, I would want to just double-check it in case there  
17 was any check and balance in the code for that.

18 I don't recall any as I sit here, but I wouldn't want to  
19 make a definitive opinion based on a hypothetical that I'm  
20 saying I think I agree with you, but I would want to check the  
21 code before I said that's what's happening.

22 Q. So sitting here today, though, with all the information  
23 you've reviewed, your understanding is that Rightscorp would  
24 send out all ten of those letters; isn't that right?

25 A. As I sit here today in this specific set of instances, I

1 think that it's at least possible that that could happen.

2 Q. And the way -- I want to focus on the way the bit field  
3 10 percent rule worked is, it would go out, and it would look  
4 at the bit field data and -- I'm going to say that a little  
5 differently.

6 Will you agree with me that under the 10 percent bit field  
7 rule, there were two sweeps done through the bit field data by  
8 the system. Do you understand what I mean by that?

9 A. No.

10 Q. Let me describe the two sweeps and see if you agree with  
11 me. Sweep one, Rightscorp goes out, gets the bit field data,  
12 pulls it in and it looks at it and it looks to see if the  
13 complete payload is there, whether the bit field data coming  
14 from the computer reports that the full payload is there; is  
15 that right?

16 A. That's correct, generally, yes.

17 Q. And if we have this situation where there are only two  
18 songs out of ten, the system is going to recognize that and put  
19 that full file flag in the database at a zero, right?

20 A. That's correct. The default value for the full file flag  
21 is zero until it's verified that all the bits are there.

22 Q. So because the system detected less than a full bit field,  
23 it leaves a zero in the database for the full file flag, right?

24 A. Correct.

25 Q. And that's because it's indicating the bit field isn't

1 full, right? If it detected a full bit field, then that value  
2 would be a one, right?

3 A. Correct so far.

4 Q. Then there's a second sweep where the 10 percent bit field  
5 rule comes in and it takes a second look at that bit field, and  
6 if it looks a bit field like this, where it's got 20 percent,  
7 it changes that full file flag to a one, right?

8 A. Again, with -- I think with the proviso that I believe  
9 there's a certain length check for the number of flags in the  
10 bit field so that shorter bit fields didn't get flipped. Like,  
11 if it was a single song, and then I don't think that it flipped  
12 it. It was for longer bit fields.

13 Q. How many bit fields would there be in a ten-song payload?

14 A. Entirely depends on the size of the pieces, because that's  
15 something that the person who creates the torrent determines.

16 Q. Let's assume for a moment that this is a ten-song album  
17 that someone has that's a CD quality. It's not compressed at  
18 all, so it's large audio files. Would it have more than those  
19 30 blocks typically?

20 A. I believe so. Assuming that -- again, that the individual  
21 piece size at the time the copy was created had not been set to  
22 a high value. And that's something that the person who creates  
23 the torrent decides. And typically they decide, you know, the  
24 larger the payload, the larger the size is basically.

25 Q. So that second sweep that happens, it goes in, looks again,

1 realizes that there's 20 percent in the payload and just  
2 switches that full file to one, right? That's how that second  
3 sweep works?

4 A. Yeah, looks at the length of the number of bits, how many  
5 bits make up the payload, and then does the math and says, if  
6 it's more than 10 percent, it sets that switch.

7 Q. Now, if we had the actual bit field data that was gathered  
8 from the customer, we could go back and look at that bit field  
9 data and look at the full file flags and see how many of the  
10 notices were sent as a result of the 10 percent bit field rule,  
11 right?

12 A. Yes. You could interrogate that. You could also determine  
13 how many of those notices had at least a piece of the file or  
14 had the full file. You would be able to tell where in the bit  
15 field that data was.

16 Q. So that bit field data that's acquired from the computer,  
17 that's like the secret decoder ring for this, right? It's the  
18 truth data that we can use to determine how much of the actual  
19 payload that computer had, right?

20 A. It would tell you which specific pieces of the payload it  
21 had. Not how much, per se, but which specific pieces.

22 Q. And we could back out from that how many notices Rightscorp  
23 sent based on the 10 percent bit field rule if we had that bit  
24 field data, right?

25 A. Yeah. I think by taking the count for some interval of

1 time and saying this many of them were full file and this many  
2 of them were less than full file, you could derive that number.  
3 Q. Well, for any individual notice we could pull the bit field  
4 data and look at it and then see whether it was full or not.  
5 And if it was full, then we'd know the notice was sent without  
6 the 10 percent bit field. And if it wasn't full, we'd know  
7 that was a notice that went out because this flag was flipped  
8 from zero to one, right?

9 A. I think we're saying the same thing essentially.

10 Q. Okay. But we don't have the bit field data, right, because  
11 Rightscorp deleted it?

12 A. I do not know the specific circumstance under which we do  
13 not have the bit field. I know that their representation is  
14 that they were unable to locate the bit field data. Whether  
15 they deleted it, whether it was not retained in the normal  
16 course of business beyond one day or three days or five days, I  
17 don't know what their business rule for that was. And I see no  
18 record that would allow me to make that determination, but my  
19 understanding is it's gone today, where we sit today.

20 Q. All we know is Mr. Boswell says it's gone, and the code  
21 says it makes a backup, right?

22 A. Again, the code says it makes a backup and I do not recall  
23 ever having done any extensive analysis of the code that was  
24 provided to me to know whether or what happens to that backup.  
25 It's certainly something one could search for to see if the

1 code subsequently, you know, in another program does something  
2 with that data, but I do not recall -- as I sit here, recall  
3 ever making such a search.

4 Q. So if we go back to this demonstrative for a moment, that  
5 slot, right here, for song number one, Rightscorp is going to  
6 send a notice, but this computer doesn't have song number one,  
7 right, in this hypothetical?

8 A. They're going to send a notice that it doesn't have it?

9 Q. No, that it does. So let me say that differently.  
10 Rightscorp is going to send a notice indicating that this  
11 computer is sharing this song, but this computer doesn't even  
12 have that song; isn't that right?

13 A. I believe that as a hypothetical that is possible, at least  
14 as I sit here without performing additional review to see if  
15 there are any other checks and balances.

16 Q. That would be a false accusation of music sharing, wouldn't  
17 it be?

18 A. For that one notice, but not for the notices five and eight  
19 that you indicate that the computer did have.

20 Q. So let's talk about another hypothetical. When the  
21 plaintiffs in this case don't own the copyrights for songs five  
22 and eight, under that hypothetical, all the notices the  
23 plaintiffs would be relying on in this case would be false?

24 MR. O'BEIRNE: Objection, Your Honor. Calls for legal  
25 conclusion.

1 THE COURT: Doesn't call for a legal conclusion.  
2 She's testifying based on her opinion, so the objection is  
3 overruled.

4 THE WITNESS: I'm sorry. Could you ask your question  
5 again?

6 BY MR. BROPHY:

7 Q. Yes. If the plaintiffs don't own the copyrights for songs  
8 five and eight, but they do for all the rest, just  
9 hypothetically, every single one of those notices would be  
10 false, right?

11 A. Under the hypothetical where a user of the BitTorrent  
12 client had for some reason selected to download only a specific  
13 song from the payload, under that specific, narrow  
14 hypothetical, and where the songs they chose to download were  
15 sufficient to meet the 10 percent threshold and they owned no  
16 other songs in the payload, in that specific, narrow  
17 hypothetical, it would appear that those notices, if they were  
18 sent, would be inaccurate. That is, again, assuming that they  
19 were sent.

20 Q. Do you have an understanding of how many entries in the  
21 database Rightscorp's 10 percent bit field threshold would  
22 process at a given time?

23 A. As I sit here, I do not recall a specific number. I would  
24 want to look at that code.

25 Q. I'd like to direct your attention to your December 2015



1 trial testimony, specifically page 425, lines 10 through 19.

2 If you wouldn't mind, please, reviewing that and let me know if  
3 that refreshes your memory on this item.

4 (Pause.)

5 A. Okay.

6 Q. Does this information help you remember how many entries in  
7 the Rightscorp database the 10 percent bit field function would  
8 process at a time?

9 A. Assuming that this transcript is actually correct, and I  
10 have no reason to believe that it's not, but again, I would  
11 want to check the code before I pounded my fist on the table,  
12 it would run 100,000 records at a time.

13 Q. 100,000 records at a time. And how often would it run  
14 that?

15 A. The data that we were looking at when this testimony was  
16 given indicated that it was being run approximately every 15  
17 minutes.

18 Q. So every 15 minutes it would process 100,000 entries from  
19 the Rightscorp database; is that right?

20 A. Yeah, I don't recall the specific document we were looking  
21 at when this was discussed in my testimony, but what it says  
22 here, what I am reciting as I look at whatever this is, is that  
23 they were running 100,000 records every 15 minutes in order to  
24 spread the processing out so that it didn't crash the system by  
25 trying to absorb all resources running against everything at

1 once.

2 Q. So if they let the 10 percent bit field rule run at full  
3 tilt, it would eat up all the memory of the computer and crash  
4 the system; is that right?

5 A. My understanding -- again, this is -- I'm not looking at  
6 the actual document, but what I was saying about the document  
7 during my testimony is that they were running it on that  
8 15-minute interval to essentially throttle its behavior so that  
9 it didn't overrun the system.

10 Q. And they were limiting it to 100,000 entries every 15  
11 minutes, right?

12 A. That's what it indicates here. Again, I don't remember the  
13 specific document we were looking at, but that's the testimony  
14 I was giving in that trial, and I'm sure I was looking at  
15 something when I was giving it.

16 Q. I believe you testified earlier that you have reviewed  
17 Mr. Boswell's testimony in this case in preparing your  
18 opinions; is that correct?

19 A. Yes. Not recently, but when I prepared my reports  
20 initially, that's correct.

21 Q. Do you recall how many notices on a percentage basis  
22 Mr. Boswell testified the 10 percent bit field affected?

23 A. I don't recall specifically his testimony on that in terms  
24 of percentages.

25 MR. BROPHY: May I approach, Your Honor?

1 THE COURT: Yes.

2 THE WITNESS: This is the 2018 testimony he gave?

3 MR. BROPHY: Yes, ma'am.

4 THE WITNESS: Just want to make sure I had the right  
5 one.

6 MR. O'BEIRNE: Your Honor, just to be clear, the  
7 witness is now being asked about Mr. Boswell's deposition  
8 testimony, not his trial testimony that's actually before the  
9 jury. I don't know if this is impeachment or how she's being  
10 confronted with his deposition testimony as opposed to his  
11 day-and-a-half trial testimony.

12 MR. BROPHY: Your Honor, she's testified that she  
13 relied on Mr. Boswell's testimony in rendering her opinions in  
14 this case, and I'm refreshing her memory on what she reviewed  
15 so she can fully articulate the opinions that she has in this  
16 case.

17 THE COURT: Well, is that trial testimony or  
18 deposition?

19 MR. BROPHY: This is deposition testimony, Your Honor.

20 THE COURT: Well, I think you said trial, but fine.

21 MR. BROPHY: I apologize for that miscommunication.

22 BY MR. BROPHY:

23 Q. Ms. Frederiksen, I'd like to direct your attention to page  
24 258 of Mr. Boswell's August 8, 2018 deposition. If you  
25 wouldn't mind, please, reviewing lines 8 through 21, and let me

1 know if that refreshes your memory about what Mr. Boswell said  
2 regarding the percentage of notices impacted by the 10 percent  
3 bit field rule.

4 (Pause.)

5 A. Sorry, you said eight through what?

6 Q. Page 258, lines 8 through 21.

7 A. Okay. Thank you.

8 (Pause.)

9 Okay.

10 Q. Having reviewed that, do you recall Mr. Boswell's testimony  
11 regarding what percentage are affected?

12 A. Yes. I think when you asked him for a ballpark, he said  
13 maybe 10 percent.

14 Q. 10 percent. So if we do the math, we've got a hundred  
15 thousand records processed every 15 minutes. 10 percent of  
16 those means the bit field 10 percent rule is impacting 10,000  
17 notifications every 15 minutes; is that right?

18 A. Systemwide, I think your math is correct there, yes. And  
19 that's assuming some even distribution or some -- 10 percent of  
20 the -- let me back up.

21 I think your general principle that some percent are being  
22 affected is correct, but I don't think you can say that it's  
23 10 percent of the total records, because in these timeframes,  
24 the -- as far as bit field was still comparatively new and so  
25 many of the records in the database would still be full file or

1 accurately reported. So with respect to, you know, what day --  
2 the number that are affected, you would have to look at the  
3 total number of detections that -- you would want to look at  
4 how the overall effect on the database was to really understand  
5 what that -- you're running against 10,000, but what was the  
6 actual effect of that? How many were already full and how many  
7 were flipped, I guess is what I'm trying to get at.

8 Q. I could not agree with you more. That's my next topic. Do  
9 you remember issuing an expert report in this case on  
10 February 3rd, 2020?

11 A. About that timeframe, yes. Are we done with this  
12 deposition?

13 Q. Pardon me?

14 A. Are we done with Boswell's deposition?

15 Q. Yes, ma'am. Please feel free to stow that. I know it's a  
16 big one.

17 A. Running out of lap here.

18 MR. BROPHY: Your Honor, may I approach once more?

19 Thank you.

20 THE WITNESS: Thank you.

21 BY MR. BROPHY:

22 Q. Okay, I'd like to direct your attention to page ten of your  
23 expert report.

24 MR. BROPHY: And Your Honor, may I publish this to the  
25 jury?

1 THE COURT: Yes.

2 MR. BROPHY: Thank you. Pardon my scribbles.

3 BY MR. BROPHY:

4 Q. You state in your expert report that --

5 A. Which paragraph is this excerpt on the screen from? I  
6 can't see the paragraph number.

7 Q. Yes, ma'am, it's paragraph number 43 on the bottom of page  
8 ten.

9 A. Thank you, sir.

10 Q. And you state there that, *"The 10 percent bit field rule*  
11 *was in place and active for one or two weeks around November of*  
12 *2014."* Do you see that?

13 A. That's my understanding based on Mr. Boswell's testimony,  
14 yes.

15 Q. Mr. Boswell's testimony in this case, right?

16 A. That's correct, yes.

17 Q. So in this case, Mr. Boswell testified that that 10 percent  
18 bit field rule was only in place for two weeks in 2014,  
19 November, right?

20 A. That's my understanding, that for this case he testified  
21 that this 10 percent change was an experiment they were doing  
22 starting in late November 2014 and running sometime into  
23 December of 2014, as best he could recall.

24 Q. And you go on to say, *"After this experimental period, the*  
25 *requirement for the peer to be offering 100 percent of the file*

1     *was put back in place."*

2             Do you see that?

3     A.   Yes, I do.

4     Q.   So your statement in this expert report, based on  
5     Mr. Boswell's testimony in this case, is that this 10 percent  
6     bit field rule was only in place for two weeks in November of  
7     2014, and right after that, we went right back to a hundred  
8     percent bit field, right?

9     A.   That was my understanding based on the available  
10    information, yes.

11    Q.   Ms. Frederiksen, do you recall giving an expert report in a  
12    prior case involving Rightscorp in August 31st -- excuse me,  
13    sorry. Pardon me. One moment.

14             MR. O'BEIRNE: Your Honor, expert report from the  
15    prior case seems to be different than testimony and opening the  
16    door to introducing her opinions from the prior case and other  
17    details about her analysis in the prior case.

18             MR. BROPHY: Your Honor, I'm impeaching her with a  
19    prior written statement.

20             THE COURT: Overruled.

21             MR. BROPHY: Trying to keep track of too many papers.  
22    I apologize.

23    BY MR. BROPHY:

24    Q.   Do you recall issuing an expert report on July 24th of 2015  
25    in a prior case?

1 A. Possibly. Would you mind telling me what case it was?

2 MR. BROPHY: May I approach, Your Honor?

3 THE COURT: Yes.

4 MR. BROPHY: Thank you.

5 THE WITNESS: Thank you.

6 A reply report, yes, okay, because I was trying to fit  
7 something in that timeframe, and I'm going --

8 BY MR. BROPHY:

9 Q. So you do remember issuing a reply report in a prior case  
10 involving Rightscorp in --

11 A. July 24, 2015 --

12 Q. -- July, 2015?

13 A. Correct.

14 MR. BROPHY: Your Honor, may I also publish this to  
15 the jury, please?

16 THE COURT: Yes.

17 BY MR. BROPHY:

18 Q. I'm going to put both of these on the screen. In the  
19 earlier case, you issued an expert report indicating that the  
20 100 percent bit field was only in use before December 2014 and  
21 that the Rightscorp system now uses a 10 percent bit field. Do  
22 you see that?

23 A. That the code had the 10 percent bit field modification  
24 still present in the code, yes, because that was a -- like an  
25 add-on program and I couldn't tell necessarily when it had been



1 used. I had to rely on the testimony of Mr. Boswell for when  
2 that was in use. So it was still in the code -- or it was  
3 present in the code in the 2015 production I had received.

4 Q. So in this case, your expert report states that the bit  
5 field 10 percent rule was only in effect for two weeks in  
6 November 2014, right?

7 A. That's my understanding of when they were actually running  
8 that code that flipped the bit field, based on Mr. Boswell's  
9 testimony, yes.

10 Q. And in July of 2015, you issued a report indicating that  
11 the 10 percent bit field was actually in place from  
12 December 2014 until the date of your expert report, right?

13 A. Would you mind scooting the page slightly so I can see just  
14 what's above that, so I can have this in context? No, in --  
15 the one that's on the top, if you could scoot that down  
16 slightly?

17 (Pause.)

18 I see that -- I am noting there that that is still present  
19 in the code, yes.

20 Q. Well, your expert report is indicating that the 10 percent  
21 bit field is in operation from December 2014 until at least the  
22 date of your expert report in July of 2015, right?

23 A. Well, what I'm noticing -- noting there -- remember that  
24 that code that flips the 10 percent bit field is code that is  
25 not a part of Test5.java, but is rather a SQL procedure that is

1 run separately. That SQL procedure was still in place in the  
2 code that I received in the 2015 production. So I had no  
3 alternative, not having had the benefit of Mr. Boswell's  
4 testimony about the specific timeframe it was used at that  
5 point, to observe that it was still in the code at that point  
6 in time.

7 Q. Isn't it true that in the earlier case, Mr. Boswell told  
8 you that the bit field 10 percent rule was in place from 2015  
9 forward, but in this case he told you the 10 percent bit field  
10 rule was only in place for two weeks in November of 2014?

11 A. Mr. Boswell -- as best I recall, Mr. Boswell had always  
12 said it was only in place for very few weeks. I think  
13 Mr. Steele, who was a -- not directly involved in the code, but  
14 was also a Rightscorp employee, had suggested he thought it  
15 might have been in place for a longer period of time. I don't  
16 recall Mr. Boswell ever saying that it was in place for a much  
17 longer period of time than a few weeks. I think he was fuzzy  
18 about exactly when it ended. It was pretty clear that it went  
19 in December 2014, and he said, sometime in the first half of  
20 December is what I recall him saying, as I sit here.

21 MR. BROPHY: May I approach, Your Honor?

22 THE COURT: Yes.

23 THE WITNESS: Thank you.

24 BY MR. BROPHY:

25 Q. Ms. Frederiksen, do you recall reviewing Mr. Boswell's

1 deposition testimony in preparing your opinions for that  
2 earlier case?

3 A. I'm sure I did, yes. I don't recall specifically the act  
4 of doing so or the details, but I'm sure I would have.

5 Q. I've handed you a Friday, July 3rd, 2015 deposition  
6 transcript from Mr. Boswell's corporate deposition in that  
7 case. And I'd like to direct your attention to page 170 of  
8 that deposition, specifically line -- page 170, line 21,  
9 through 171, line 3.

10 A. I'm sorry. You said page 170?

11 Q. Yes, ma'am, page 170, line 21.

12 (Pause.)

13 A. Okay, I see this.

14 Q. Does reviewing this transcript refresh your memory about  
15 what Mr. Boswell said about the operation of the 10 percent bit  
16 field rule in 2014 and 2015?

17 A. As he first says, that it uses the entire bit field, and  
18 then he says -- the question is, *"Does it apply that 10 percent*  
19 *threshold to specific parts of the bit field to look for values*  
20 *in a specific part or does it look for particular values across*  
21 *the entire bit field?"* And he says that *"Since 2015, it only*  
22 *looks at 10 percent across the board."*

23 Q. So he doesn't say two weeks in November of 2014. He says  
24 since 2015, it's in effect; isn't that right?

25 A. That's what he appears to be saying here.

1 Q. And he gave this testimony in July 2015; isn't that right?

2 A. The date on the testimony is in July of 2015, yes,  
3 July 3rd, 2015.

4 Q. So the deposition testimony you reviewed in the earlier  
5 case, Mr. Boswell testified this was in effect for seven months  
6 at least; isn't that right?

7 A. That would be approximately right, yes.

8 Q. That's a lot different than two weeks in November 2014,  
9 isn't it?

10 A. It is a different time period. It was also a different  
11 case and I don't see anything here that elaborates on whether  
12 that was being applied differently based on the ISP involved  
13 or -- I mean, I would have to refresh my recollection of his  
14 testimony. It was seven years ago, but I see here that he is  
15 saying that. I just don't recall the specific context in which  
16 he gave that testimony.

17 Q. Do you recall issuing a declaration in this case? This  
18 case, January 17th, 2019?

19 A. I recall issuing a declaration in this case. I don't  
20 recall the specific date. I think there was only one, though.

21 MR. BROPHY: May I approach, Your Honor?

22 THE COURT: Yes.

23 BY MR. BROPHY:

24 Q. In January of 2019, in this case, you issued a declaration  
25 indicating that *the 10 percent bit field rule was in place from*

1 *December 2014 until September 1 of 2015, didn't you?*

2 A. Are you referring to paragraph ten here?

3 Q. Yes, ma'am.

4 A. Yes, I see that.

5 Q. So in this case, you issued a sworn declaration that the  
6 bit field was in -- the 10 percent bit field was in play from  
7 December 2014 until at least September 1st of 2015; isn't that  
8 right?

9 A. That was based, I believe, on Mr. Steele's testimony about  
10 it, yes.

11 Q. And then in this case, Mr. Boswell gave this new testimony,  
12 about two weeks in November 2014; isn't that right?

13 A. I don't have them arranged in the chronological order he  
14 gave them, but I see that that is what he said here that I  
15 quoted in my report.

16 MR. BROPHY: Your Honor, may I publish the declaration  
17 that Ms. Frederiksen issued in January 2019 to the jury?

18 THE COURT: Yes.

19 MR. BROPHY: Too many pages and not enough ELMO.

20 BY MR. BROPHY:

21 Q. So this is the statement you made in January of 2019 in  
22 this case, that, *"In December 2014, the system was also changed*  
23 *to increase the sensitivity of the infringement detection*  
24 *because some peers were attempting to evade detection by*  
25 *reporting partial bit field. It's my understanding that this*

1 *chain was reversed on September 1st, 2015."*

2 Do you see that?

3 A. I see that.

4 Q. How many months is that?

5 A. Nine or ten, depending on when in December it was  
6 implemented.

7 Q. So in this case, you issued a declaration indicating the  
8 bit field 10 percent rule was in place for nine or ten months,  
9 right?

10 A. I see that.

11 Q. And in an earlier case, you issued an expert report  
12 indicating that the 10 percent bit field was in place from  
13 December 2014 until at least the issuance of that report, which  
14 was months and months later, right?

15 A. July of 2015, I believe was the date of that report, yes.

16 Q. And suddenly in this case, magically the bit field  
17 10 percent rule has shrunk, and it's only active for two weeks  
18 in November 2014, right?

19 MR. O'BEIRNE: Your Honor, objection to "magically."

20 THE COURT: Yes. Over editorializing, counsel.

21 MR. BROPHY: Apologies, Your Honor.

22 A. I had gone back and reviewed the deposition transcripts,  
23 and the one I found that I cited at the bottom of that page is  
24 Mr. Boswell's transcript Volume 1 from this case. And so I was  
25 reviewing the transcript specifically to identify the time

1 period. And I believed at the time I wrote this that to be his  
2 most recent and, therefore, likely he had done additional  
3 research to try to confirm those dates.

4 But the dates -- I agree with you that there is an  
5 inconsistency in these dates. I don't dispute that at all. I  
6 really don't, counsel.

7 Could you remind me the date of the report that we're  
8 looking at on the main page here, page 10 of 40?

9 BY MR. BROPHY:

10 Q. The date of this report that you issued in this case is  
11 February 3rd, 2020.

12 A. Okay. So that is the most recent report. And the date of  
13 Mr. Boswell's transcript, if you have that date? I'm sure it's  
14 probably on my lap here somewhere, but I'm not sure which one  
15 it is.

16 Q. August of 2018.

17 A. The date that I cite in this report or was that one of his  
18 more recent depositions?

19 Q. This right here, this Boswell depo Volume 1, page 262?

20 A. Yeah, I can't see it on my screen, but you can see it on  
21 yours.

22 Q. That was in 2018.

23 A. That was the 2018 one. Okay, thank you.

24 Q. So we looked at Mr. Boswell's testimony from 2015, which  
25 you reviewed, right?

1 A. Correct.

2 Q. And in 2015, he testified that the 10 percent bit field  
3 rule was in effect since 2015, right?

4 A. I think it was since 2014, but he testified that it was in  
5 effect in 2015, if I'm not mistaken of that testimony.

6 Q. Well, he gave testimony July 3rd, 2015 indicating that the  
7 10 percent bit field rule had been in effect since 2015, right?

8 A. Okay. Since the beginning of the year, so seven months.

9 Q. Seven months.

10 A. Six and a half months at that time.

11 Q. In this case, he changed his testimony and said it was only  
12 active for two weeks in November 2014, right?

13 A. I observed that here, yes.

14 Q. And you changed your opinion based solely on his changed  
15 testimony, right?

16 A. I was using his testimony as a guideline for when that had  
17 been in place, that's correct.

18 Q. Why would his testimony in 2018, so far removed from the  
19 dates in question, in your view be more accurate than the  
20 testimony he gave closer in time to the actions that he had  
21 taken?

22 A. I don't have an answer for that, counsel. When I was  
23 preparing this report, I went back and reviewed the deposition  
24 transcripts that I still had in my possession at that point in  
25 time, and this was the one where I found the dates he recited,



1 and so I cited in my report. Why there would be discontinuity  
2 in his testimony, I do not know.

3 Q. Pardon me while I do a little bit of housekeeping.

4 By changing his testimony to decrease the amount of time to  
5 two weeks in November of 2014, that would minimize the impact  
6 of the 10 percent rule, right?

7 A. In what respect? Are you just saying that it would mean  
8 that it was in effect for a shorter period of time?

9 Q. Instead of the earlier testimony when it was in effect for  
10 months and months, he's now changed his testimony that the  
11 10 percent bit field was only in place for two weeks, right?

12 A. Yes.

13 Q. And as a result of that, he has minimized the number of  
14 notices potentially impacted by that 10 percent bit field rule,  
15 right?

16 A. Or at least the duration of time that that rule was in  
17 effect, yes.

18 Q. And we talked earlier about the fact that this process goes  
19 through a hundred thousand entries every 15 minutes, right?

20 A. In the entire Rightscorp database table, yeah.

21 Q. Yes. And so, obviously, if you have that running for  
22 months and months, it's going to impact far more notices than  
23 two weeks, right?

24 A. I think that's a safe assumption, yes.

25 Q. And so Mr. Boswell was motivated to limit that time, to

1 modify his testimony to limit the amount of impact that those  
2 10 percent bit field rules had on the notices Rightscorp sent,  
3 right?

4 MR. O'BEIRNE: Objection, Your Honor.

5 THE COURT: Yes. You're calling for her to speculate  
6 on what motivates Mr. Boswell.

7 BY MR. BROPHY:

8 Q. Now, I believe at the beginning of my cross-examination of  
9 you, we talked about those dominoes falling and Memphis and  
10 Pocket versus Test5.java. Do you remember that?

11 A. Yes, I do.

12 Q. And your testimony was that, based on Mr. Boswell's  
13 testimony, you understood that as of October 2015, Rightscorp  
14 was now using the Memphis and Pocket functions and not the  
15 Test5.java functions, right?

16 A. My recollection is that's when he testified they made the  
17 switch was in that timeframe.

18 Q. And I believe that you testified to a refinement under  
19 which Memphis and Pocket no longer looked at the entire bit  
20 field of the payload, but instead focused on the bit field for  
21 individual files within a payload; is that right?

22 A. Correct.

23 Q. But we're relying exclusively on Mr. Boswell's testimony  
24 about when that switch took place, right?

25 A. By that I believe I'm asking, we're relying on his

1 testimony for when he started using that code; is that correct?

2 Q. That's correct, ma'am.

3 A. Yes, I think that would be true.

4 Q. And this is the same person who changed their testimony in  
5 this case, right?

6 A. That it would appear that Mr. Boswell -- reviewing the  
7 excerpts that we've reviewed out of the proper context, I'm  
8 assuming that your representation that these were kind of  
9 in-isolation statements or your implied representation is  
10 correct. I haven't had a chance to verify that. But it is the  
11 same Mr. Boswell that we are talking about, that there's only  
12 one of them, as far as I know.

13 Q. Now, that 10 percent bit field rule, that was a SQL query  
14 that was run on the Rightscorp database; isn't that right?

15 A. Yes, that's what I meant by the fact that it was outside  
16 the code proper. The code functions as the code functions, and  
17 then this SQL query ran against the torrent infractions table  
18 to flip the full file field as a separate thing from the large  
19 body of the code.

20 Q. The truth of the matter is we can't know when that  
21 10 percent bit field function stopped running; isn't that  
22 right?

23 A. My recollection is that in the program or in the procedure  
24 that fires that off, that fires that function off, there was a  
25 date. And as I sit here, I don't recall if it was the date

1 that it started or the date that it ended. We know that at  
2 some point in time the name of that function was changed such  
3 that even if that other script was running, the function could  
4 not execute, because it was still looking for the old name. So  
5 I remember that there was a date in association with something  
6 related to this file.

7 As I sit here, I don't remember the specifics of whether  
8 that was an ending date because it was in the function that  
9 invoked it or if it was a starting date with respect to the  
10 function of when it began being used, but there were some  
11 comments in the code that delineated some date information.

12 Q. I'd like to direct the Court's attention to your  
13 December 15, 2021 deposition, page 241, line 21 through 242,  
14 line 11. 241, 21, through 242, line 11.

15 A. Hold on just a second. Let me catch up to you if I could.  
16 Sorry again, the page?

17 Q. 241, line 21, through 242, line 11.

18 I asked the question, *"That SQL query could have been*  
19 *running after October 21st, 2015, right?"*

20 And you answer, *"Yeah, I would be speculating, counsel. I*  
21 *don't know. Let me see if I can determine when they turned it*  
22 *off. I'm not seeing anything here at the moment, counsel, that*  
23 *I can identify that tells me specifically when it was turned on*  
24 *or when it was turned off. I'm not saying there isn't*  
25 *something in here that would tell me that, but I don't see*

1 *anything as I sit here that tells me that dispositively."*

2 Do you see that?

3 A. Let me just look back to see what I was commenting on when  
4 I made that observation, if you don't mind.

5 *(Pause.)*

6 Q. Ms. Frederiksen-Cross, we can't know when that 10 percent  
7 bit field stopped; isn't that right?

8 A. With respect to the issue -- the hypothetical we discussed  
9 before where we were talking about a payload that could  
10 potentially have selective songs, a peer could download only  
11 selective songs, the operation of the code was changed in  
12 October 2015 to look only at specific songs. So in a worst  
13 case, the point in time where the 10 percent bit field could be  
14 at effect would be from when it was put in place in late  
15 November, December of 2014 until that change in October '15  
16 where it would no longer matter, because each individual song  
17 was being identified by its bit field.

18 But up until that time, I think, given the contradictions  
19 in the testimony and the fact that there is no clear record,  
20 there may be a time period there of as much as from late 2014  
21 to that code change in October 2015 when we would not know if  
22 it ran. After that, if it ran, it wouldn't matter, because  
23 each bit field was individually being identified or each set of  
24 bit fields was being individually identified in the  
25 notification. So it wouldn't matter with respect to the

1 accuracy.

2 Q. You've already testified we were relying on Mr. Boswell to  
3 know that October 2015 switch-over date, right?

4 A. I think there were some comments in some of the code  
5 related to that date as well. And we know that when they  
6 started using the revision control system in early 2016, that  
7 that code was checked in whole and intact and into that  
8 revision control when they first started using it.

9 Q. When I asked you this question in December of 2021, your  
10 answer was, *"There is nothing that tells you dispositively*  
11 *whether the 10 percent bit field was ever turned off."* Right?

12 A. I don't think that there is any dispositive evidentiary  
13 record. The point I'm making is that the period in which it  
14 would affect or potentially affect the accuracy of a notice,  
15 under the hypothetical you were giving, is bounded to that time  
16 period before the system began checking individual files within  
17 a payload as opposed to the payload as a whole.

18 Q. And we're relying on Mr. Boswell to know when that  
19 changeover happened; isn't that right?

20 A. No. We can tell when that changeover happened, at the  
21 latest, from the time that code was entered into the revision  
22 control system.

23 Q. So sitting here today, we have no idea how many e-mails are  
24 impacted by this 10 percent bit field process; isn't that  
25 right?

1 A. I do not have a specific count as I sit here today.

2 Q. What we do know is that that process was going through a  
3 hundred thousand entries in Rightscorp database every 15  
4 minutes and potentially sending out more notices, right?

5 A. Well, the process itself didn't send notices, but it would  
6 potentially be marking peers that had 10 percent of the payload  
7 as notice-eligible for a particular detection.

8 Q. It was going in and manipulating the data in the database  
9 to change zeros to ones, right?

10 MR. O'BEIRNE: Objection as to "manipulating the  
11 database."

12 BY MR. BROPHY:

13 Q. It was going in and changing zeros to ones in the database,  
14 wasn't it?

15 A. A zero to a one, per record. That multi -- we're not  
16 talking about the bit field here, but it was flipping that flag  
17 that -- I think it was called full load or full file that was  
18 used in the processing to determine whether a particular  
19 detection was notice-eligible, along with some other criteria.

20 Q. And every single flag it flipped was an e-mail that the  
21 Rightstcorp system otherwise wasn't going to send, right?

22 A. That is not necessarily true. And the reason it is not  
23 necessarily true is that there were some bounds and limits for  
24 some ISPs on how many notices could or would be sent for a  
25 particular ISP over a particular time period. So it is true

1 that it was marking as eligible records, but that doesn't  
2 necessarily translate to an e-mail being sent for each of those  
3 records, if that makes sense.

4 MR. BROPHY: Your Honor, I have a little bit more  
5 questioning. I know we're late in the day.

6 THE COURT: I presume you're going to have redirect,  
7 am I right?

8 MR. O'BEIRNE: Yes, Your Honor.

9 THE COURT: All right. Then there's no sense in  
10 trying to push this. So you're going to have to come back  
11 tomorrow.

12 THE WITNESS: Okay.

13 THE COURT: All right. Ladies and gentlemen, thank  
14 you very much. Tomorrow is just a regular day, right,  
15 Priscilla?

16 COURTROOM DEPUTY CLERK: Yes, Judge.

17 THE COURT: Okay. We've got a regular day tomorrow.  
18 Thursday is another story, but tomorrow is a regular day.

19 COURT SECURITY OFFICER: Please rise for the jury.

20 *(4:35 p.m., the jury exits the courtroom.)*

21 THE COURT: Please be seated. We're moving kind of  
22 slow here, to say the least. I didn't anticipate this witness  
23 to go all day today. And we kind of need to speed it up a bit.  
24 I mean, I'm not the former Judge Sparks who, you know, said,  
25 You each have 48 hours, good luck, to put your case on.



1           You can step down, ma'am.

2           But we need to speed it up, because I think we are --  
3 both sides have been reploting some ground here and I think we  
4 don't have -- given the length of this trial and the complexity  
5 of it, that has a tendency to confuse a jury more than it does  
6 help. So I'm not addressing this to any particular lawyer or  
7 side. I think this is kind of universal here, so we need to  
8 kind of move a little bit quicker. Kind of get to the crux of  
9 it a little bit faster. Otherwise, we're going to be here for  
10 another month, and that's not going to happen.

11           So. All right? Anything else before we break?

12           MR. BROPHY: No, Your Honor.

13           MR. O'BEIRNE: No, Your Honor.

14           THE COURT: Okay. Thank you very much. Have a good  
15 evening.

16           COURT SECURITY OFFICER: All rise.

17           (4:36 p.m.)

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UNITED STATES DISTRICT COURT

WESTERN DISTRICT OF TEXAS

I certify that the foregoing is a correct transcript from the record of proceedings in the above-entitled matter. I further certify that the transcript fees and format comply with those prescribed by the Court and the Judicial Conference of the United States.

Date signed: November 6, 2022

/s/ Angela M. Hailey

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